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H

RARE BOOK



Leaves flat, all quite entire.

Leaves mostly 2 to 6 in. long. Cones  $\frac{1}{2}$  to  $1\frac{1}{2}$  in. diameter.

Perianth glabrous or with tufts of hairs only at the ends of the segments.

Cones large, solitary, with numerous outer bracts. Perianth 1 in. long or more.

Involure  $1\frac{1}{2}$  in. diameter, exceeding the cone-scales.

Perianth  $1\frac{1}{2}$  in. long.

Involure 1 in. diameter, not exceeding the cone-scales.

Perianth 1 in. long

Cones under 1 in. diameter, often clustered. Perianth about  $\frac{1}{2}$  in. long. Leaves narrow.

Outer bracts longer than the cone-scales

Outer bracts shorter than the cone-scales

Perianth-segments hirsute from the middle. Cones under 1 in. diameter, often clustered. Involucral bracts lanceolate, acuminate

Perianth-segments densely plumose-villous.

Stems erect, leafy, villous. Terminal cones large, solitary or clustered

Stems dwarf or scarcely any. Cones clustered at the base of the elongated petioles

Leaves mostly under 1 in. long or the lower ones 2 in. Cones small, ovoid. Perianth segments plumose.

Cones clustered at the ends of the branches

Cones axillary along the branches

Leaves cuneate, mostly 3-toothed

Leaves undulate, broadly cuneate and dentate or broadly twice or thrice 3-lobed

Leaves linear or linear-cuneate, once or twice ternately divided

Leaves slender, terete, trifid, crowded, under 1 in. long

(See also *Petrophila circinata*, which has the cones nearly of *Hypsanthus* with the flowers of *Petrophila*, and *P. inconspicua*, which much resembles *I. adenanthoides*.)

SECT. 2. *Eustrobilus*.—Cone-scales all with broad dilated or truncate ends, closely imbricate after flowering. Receptacle convex, conical, or cylindrical.

Perianth silky pubescent or villous. Leaves flat.

Leaves cuneate or spatulate, mostly 3-toothed or shortly 3-lobed

14. *I. trilobus*.

Leaves linear or linear-lanceolate, mostly divided into 3 segments of  $\frac{1}{2}$  to 1 in.

15. *I. tripartitus*.

Leaves linear or oblanceolate, 4 to 8 in. long, entire or with 1 or 2 long linear lobes

16. *I. longifolius*.

Perianth silky-pubescent or villous. Leaves terete.

Outer bracts few besides the floral leaves, tomentose. Cone-scales plumose-villous.

17. *I. Drummondii*.

Leaves all undivided. Cones large, terminal, depressed-globular

18. *I. heterophyllus*.

Leaves undivided or 2- or 3 lobed. Cones terminal, ovoid-globular.

(See also 29, *I. scabriusculus*.)

Leave 2-3-chotomous, very long. Stems dwarf or scarcely any. Cones large, ovoid-oblong, sessile amongst the leaves

19. *I. villosus*.

Outer bracts imbricate, broad, glabrous.

Leaves rigid, entire, or once, twice, or thrice divided. Cones mostly nodding. Western species

20. *I. teretifolius*.

Leaves slender, twice or thrice divided. Cones erect.

21. *I. anethifolius*.

Eastern species



Perianth glabrous or with a tuft of hairs at the end of the segments. Leaves much divided or rarely entire, flat and veined, or if nearly terete grooved or channelled above.

Eastern species. Leaves much divided, with flat pungent-pointed segments. Flowers yellow.

Outer bracts shorter than the cone-scales.

Petioles 2 to 3 in. long. Perianth about 4 lines . . . . . 22. *I. petiolaris*.

Petioles 1 to 1½ in. long. Perianth 5 or 6 lines . . . . . 23. *I. anemonifolius*.

Outer bracts numerous, longer than the cone-scales. Leaf-segments very numerous, divaricate, and pungent-pointed . . . . . 24. *I. ceratophyllum*.

Western species. Leaf-segments or leaves narrow and concave or nearly terete but grooved. Flowers red or lilac (colour unknown in *I. scabriusculus*).

Leaves crowded, short, with narrow-linear segments. Cones small, often crowded at the ends of the branches . . . . . 25. *I. asper*.

Leaves mostly once or twice divided into linear-cuneate segments. Cones terminal, rather large . . . . . 26. *I. crithmifolius*.

Leaves much divided, with short nearly terete pungent-pointed segments. Cones terminal . . . . . 27. *I. formosus*.

Leaves once or twice divided, with slender nearly terete segments. Cones terminal. Perianth 1 in. long . . . . . 28. *I. divergens*.

Leaves terete or linear and thick, 2 to 4 in. long, entire or 3 lobed. Cones terminal, small . . . . . 29. *I. scabriusculus*.

*I. pedunculatus*, R. Br. Prot. Nov. 7, Meissn. in DC. Prod. xiv. 277, was founded on two specimens of Fraser's from Swan river, with the cones in too imperfect a state to establish their generic affinity with certainty. If the plant is a true *Isopogon*, it is most probably a variety of *I. divergens*, but the cone not being so closely surrounded by floral leaves as in most species of *Isopogon*, it is more probably a *Petrophila*, and in that case referable to *P. seminuda*.

SECT. 1. HYPANTHUS, Endl.—Cone-scales acuminate, not very closely imbricate, the inner ones narrow, often plumose-villous and very deciduous. Receptacle flat convex or rarely oblong. Leaves flat, often entire, sometimes broad, divided into few flat segments in a few species, with terete segments in *I. adenanthoides*.

The two divisions proposed by Brown and established as sections by Endlicher, appear to me much more definite than the three founded chiefly on the foliage by Meissner.

1. ***I. latifolius***, R. Br. Prot. Nov. 8. A tall stout species attaining 10 ft., and from a distance assuming the aspect of a *rhododendron* (*F. Mueller*), the branches pubescent towards the end, the foliage glabrous. Leaves obovate to elliptical-oblong, obtuse with a small callous point, entire, narrowed into a very short petiole or nearly sessile, 3 to 4 in. long, obscurely veined. Cones large, terminal, depressed-globular. Outer bracts ovate to ovate-lanceolate, the inner ones ½ in. long, numerous and imbricate in several rows in an involucre of 1½ in. diameter concealing the scales, which are woolly outside, glabrous inside, the outer ones lanceolate, the inner linear. Perianth-tube filiform, glabrous, 1½ in. long; laminae linear, about ¼ in. long, tipped with a small tuft of silky hairs. Ovary crowned by a tuft of short hairs. Style-end oblong-clavate pubescent and suddenly contracted under the fusiform brush, which bears reflexed hairs in 8 longitudinal rows. Receptacle conical or almost cylindrical, nearly 1 in. long after the fall of the fruit.—Meissn.

in DC. Prod. xiv. 282, as to Brown's typical plant only; *I. protea*, Meissn. l.c. 283; F. Muell. Fragm. vi. 237.

**W. Australia.** King George's Sound or the immediate neighbourhood, *Baxter*, *Drummond*, 5th coll. n. 398; Summit of Mongyrap, Stirling Range, *F. Mueller*. Baxter appears to have gathered only a single specimen in fruit, preserved in Brown's supplemental herbarium, which was probably not shown to Meissner when he went through the Proteaceæ of Brown's own collecting.

**2. *I. cuneatus***, *R. Br.* in *Trans. Linn. Soc.* x. 73, *Prod.* 366. A stout shrub, attaining 7 or 8 ft. but flowering sometimes when quite low, glabrous except the cones, or the young shoots silky-villous. Leaves from obovate-oblong to lanceolate or oblanceolate, obtuse with a small callous point, contracted into a short broad petiole or almost sessile and often dilated and half stem-clasping at the base, rather thick, obscurely veined, 3 to 4 in. long, and varying in breadth in the same specimen from  $\frac{1}{2}$  to  $1\frac{1}{2}$  in. Cones terminal, depressed-globular, 1 to  $1\frac{1}{4}$  in. diameter without the perianths. Outer bracts broad, glabrous or nearly so, obtuse, shorter than the scales. Cone-scales numerous, the outer ones ovate, the inner ones lanceolate or linear, all very villous outside. Perianth pale purple, about 1 in. long, glabrous or with small tufts at the tips of the laminae. Style-end clavate and glabrous except the obtuse villous extremity below the narrow reflexed-hairy brush. Receptacle hemispherical or shortly and obtusely conical.—Meissn. in DC. Prod. xiv. 283; *I. Loudoni*, Baxt. in R. Br. Prot. Nov. 8; Bot. Mag. t. 3421; Meissn. l.c.; F. Muell. Fragm. vi. 238; *I. latifolius* var. *Preissii* and var. *lanceolatus*, Meissn. in Pl. Preiss. i. 508, and in DC. Prod. xiv. 282, 283.

**W. Australia.** King George's Sound and adjoining districts, *Menzies*, *Baxter*, *Drummond*, 5th coll. n. 397, *Preiss*, n. 664, and many others.

The pubescence of the young shoots is very variable, and neither that nor the breadth of the leaves afford characters for separating distinct varieties.

**3. *I. linearis***, *Meissn.* in *Hook. Kew Journ.* vii. 69, and in DC. Prod. xiv. 282. An erect shrub of 1 to 2 ft., the branches and young leaves softly pubescent, the older foliage glabrous. Leaves linear, with a callous point, contracted into a short petiole, mostly  $1\frac{1}{2}$  to  $2\frac{1}{2}$  in. long, thick, with more or less distinct nerve-like margins and a very few oblique veins. Cones nearly globular,  $\frac{3}{4}$  to 1 in. diameter, terminal and solitary or in a cluster of 2 or 3. Outer bracts not numerous but rather large and imbricate, ovate-lanceolate, silky-pubescent or at length nearly glabrous, the inner ones  $\frac{1}{2}$  in. long. Cone-scales shorter, the outer ones broad the inner ones narrow-lanceolate, all very woolly-villous outside. Perianth quite glabrous, rather above  $\frac{1}{2}$  in. long. Style-end slightly clavate and minutely pubescent, separated by a narrower neck from the pubescent bulbous base of the otherwise glabrous narrow brush. Receptacle ovoid-conical.—F. Muell. Fragm. vi. 236.

**W. Australia.** Gardiner's Range north of Dundiragan, towards Moore river, *Drummond*, 6th coll. n. 169.

**4. *I. polycephalus***, *R. Br.* in *Trans. Linn. Soc.* x. 73, *Prod.* 366. An erect or spreading shrub of 1 to 3 ft., the young shoots tomentose or villous the adult foliage glabrous. Leaves linear-oblong or oblanceo-

late, obtuse with a small callous point, contracted into a short petiole, 2 to near 4 in. long, or in some specimens nearly twice as long, thick and veinless or obscurely veined. Cones sessile and usually clustered 2 or 3 together at the ends of the branches, about  $\frac{1}{2}$  in. diameter or the terminal one larger. Outer bracts few and tomentose. Cone-scales densely villous outside, a few of the outer ones broad, all the others lanceolate or linear and mostly terminating in subulate densely plumose points. Perianth nearly  $\frac{1}{2}$  in. long, quite glabrous. Style slightly thickened and shortly hairy towards the end, or quite glabrous, without any constriction or distinct brush.—Meissn. in DC. Prod. xiv. 281; F. Muell. Fragm. vi. 236.

**W. Australia.** King George's Sound, *R. Brown*, *Baxter*; Stirling Range, *F. Mueller*; Gales Brook and E. Shoal Cape, *Maxwell*.

**5. I. attenuatus**, *R. Br.* in *Trans. Linn. Soc.* x. 73, *Prod.* 366. A shrub of 2 or 3 ft., glabrous except the cones, or the young shoots slightly pubescent. Leaves oblong-spathulate to almost linear, with a small straight or hooked point, much narrowed into the petiole, mostly 4 to 6 in. long, thick and almost veinless. Cones terminal or in the upper axils, sessile, depressed-globular,  $\frac{3}{4}$  to 1 in. diameter without the perianths. Outer bracts not numerous, lanceolate, rigid, as long as or longer than the scales, the outer ones passing into small floral leaves. Cone-scales lanceolate or the inner ones linear, the outer ones villous at the base and ciliate on the margins, the inner more villous all over the back. Perianth "pale yellow" not  $\frac{1}{2}$  in. long, the laminæ villous outside, the tube glabrous or nearly so. Style slightly thickened towards the end as in *I. polyccephalus*, without any distinct constriction or brush.—Bot. Mag. t. 4372; Meissn. in DC. Prod. xiv. 281; F. Muell. Fragm. vi. 237.

**W. Australia.** King George's Sound and adjoining districts, *R. Brown*, *Baxter*, *Drummond*, 2nd coll. n. 294; *Preiss*, n. 663, and others.

Var. *latebracteata*. Outer bracts broadly lanceolate and thinner than in the typical form.—*Swan river*, *Fraser*; *Gordon river*, *Oldfield*.

**6. I. sphærocephalus**, *Lindl.* *Swan Riv. App.* 34. An erect shrub of several ft., the branches and younger leaves pubescent and clothed or sprinkled with long spreading hairs. Leaves linear or almost lanceolate, obtuse with a short callous point, slightly contracted towards the base but sessile, 2 to 4 in. long, the margins often recurved and the midrib prominent underneath. Cones solitary and terminal or 2 or 3 crowded at the ends of the branches, globular,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. diameter without the perianth. Outer empty bracts not numerous, imbricate, lanceolate, villous, not exceeding the scales. Outer cone-scales ovate, inner ones narrow, all villous outside, with small recurved points. Perianth above  $\frac{1}{2}$  in. long, the tube glabrous, the laminæ densely hirsute with yellow hairs. Style-end turbinate, densely pubescent and separated by a short constriction from the somewhat bulbous base of the linear almost glabrous brush. Receptacle ovoid-oblong.—Meissn. in Pl. Preiss. i. 508, and in DC. Prod. xiv. 281; Bot. Mag. t. 4332.

**W. Australia.** Swan river, *Drummond*, 1st coll. n. 559, *Preiss*, n. 688; Swan and Vasse rivers, *Oldfield*.

**7. I. uncinatus**, *R. Br. Prot. Nov. 8.* Stems very short or scarcely any, bearing a cluster of 2 to 4 sessile cones in a tuft of long leaves, thus assuming the aspect of *Cimospermum petiolare*. Leaves linear or lanceolate, terminating in a hooked callous point, involute when young, contracted into a long petiole, the longer ones attaining 8 to 12 in., the broader ones much shorter, finely hairy when young, at length glabrous. Outer bracts few, nearly glabrous. Cone-scales villous, lanceolate, the outer ones rather broad, the inner very narrow. Perianth about  $\frac{1}{2}$  in. long, the laminae and upper part of the tube densely hirsute with yellowish hairs, the lower portion alone glabrous. Style narrow-fusiform towards the end and slightly pubescent in the lower portion of the thickened part, but not divided by any distinct constriction.—Meissn. in Pl. *Preiss*, i. 509, ii. 247, and in DC. Prod. xiv. 281.

**W. Australia.** King George's Sound or neighbouring districts, *Baxter*, *Drummond*, 3rd coll. n. 243, *Preiss*, n. 758.

**8. I. buxifolius**, *R. Br. in Trans. Linn. Soc. x. 74, Prod. 367.* A bushy and leafy shrub of 3 or 4 ft., the branches and young shoots pubescent, the adult foliage glabrous. Leaves very variable, usually small and crowded, rarely 1 in. long, flat or concave. Cones sessile and solitary or clustered at the ends of the branches in a tuft of floral leaves, ovoid, 4 or 5 lines long without the perianths. Outer bracts few, lanceolate, ciliate. Outer cone-scales like the outer bracts but villous also on the back, inner ones linear. Perianth about  $\frac{1}{2}$  in. long, the segments separating far below the laminae, leaving the entire tube short, glabrous except terminal tufts of hairs which sometimes extend half way down the laminae. Style slightly thickened into a narrow fusiform brush marked with longitudinal lines of reflexed hairs, but without any dilatation or constriction below the brush.—Meissn. in DC. Prod. xiv. 282; *I. spathulatus*, *R. Br. Prot. Nov. 8*; Meissn. in Pl. *Preiss*, i. 509, ii. 247, and in DC. Prod. xiv. 282.

**W. Australia.** King George's Sound and adjoining districts, *R. Brown*, and many others.

The forms assumed by the leaves in different specimens are so different that the following varieties might be easily taken for distinct species.

*a. spathulatus*. Leaves obovate-spathulate, contracted into a distinct petiole, mostly about  $\frac{1}{2}$  in. long.—*Drummond*, 3rd coll. n. 249.

*b. oblongatus*, Br. Leaves obovate or oblong, more or less contracted at the base but not petiolate,  $\frac{1}{2}$  to 1 in. long.—*Drummond*, 5th coll. n. 396.

*c. typicus*. Leaves broadly sessile, ovate, with short recurved points, 3 to 4 lines long.—Only seen in Herb. R. Brown.

*d. linearis*, Br. Leaves narrow oblong or linear, sessile,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long. Bot. Mag. t. 3450.—Apparently the most common variety, occurring in the collections of *Baxter*, *Drummond*, 5th coll. n. 395, *Oldfield*, *Marwell*, and *F. Mueller*.

**9. I. axillaris**, *R. Br. in Trans. Linn. Soc. x. 74, Prod. 367.* A shrub with erect virgate branches, glabrous except the cones. Leaves linear or oblanceolate, obtuse with a small callous point, contracted into a

short petiole or the smaller ones sessile, the lower ones often 3 or 4 in. long, the floral ones sometimes all under 1 in., all thick and veinless. Cones small, ovoid, sessile and axillary, rarely  $\frac{1}{2}$  in. long without the perianths. Outer bracts ovate, obtuse, glabrous or with shortly ciliate margins, concave and imbricate, concealing the scales. Cone-scales silky-villous outside, a very few of the outer ones nearly ovate, the inner ones linear. Flowers often not above 10 or 12 in the cone. Perianth-tube filiform, glabrous, at least 1 in. long, lob. s narrow, 4 or 5 lines long, plumose-villous outside above the middle. Style-end elongated clavate pubescent, separated by a constriction from the somewhat bulbous pubescent base of the brush, which is otherwise only minutely pubescent along the angles.—Meissn. in Pl. Preiss. i. 510, and in DC. Prod. xiv. 282; Guillem. Ic. Pl. Austral. t. 19; Hook. Ic. Pl. t. 438.

**W. Australia.** King George's Sound and adjoining district, *R. Brown, Baxter, Drummond, Preiss*, n. 653, and many others; Vasse river, *Olffield*.

10. **I. tridens**, F. Muell. *Fragm.* vi. 239. A shrub with the habit and nearly the foliage of the shorter-lobed forms of *I. trilobus*, but a very different cone. Young shoots slightly pubescent, adult foliage and branches glabrous. Leaves narrow-cuneate, mostly 3-toothed, contracted into a rather long petiole, thick and obscurely veined, the whole leaf 1 $\frac{1}{2}$  to 3 in. long. Cones terminal, sessile, depressed-globular, about  $\frac{3}{4}$  in. diameter without the perianths. Outer bracts broad, tomentose outside, numerous and closely imbricate, forming an involucre of  $\frac{3}{4}$  in. diameter. Cone-scales acuminate, the outer ones ovate-lanceolate, the inner ones narrow, all very densely villous on the back with long hairs, fulvous in the lower concealed portion, white on the exposed tips. Perianths not seen. Receptacle convex. Fruit of *Isopogon*.—*I. trilobus* var. *tridens*, Meissn. in Hook. Kew Journ. vii. 70 and in DC. Prod. xiv. 280.

**W. Australia.** Sandy plains near Diamond Spring, Moore river, *Drummond, 6th coll. n. 170*.

11. **I. Baxteri**, R. Br. *Prot. Nov.* 9. An erect shrub of several ft., the young shoots softly villous, the adult foliage glabrous. Leaves from broadly cuneate undulate and toothed only at the end, to twice or thrice 3-lobed, the lobes or teeth all broad undulate and pungent-pointed, the whole leaf 1 to 2 in. long and often as broad at the end as long, contracted at the base or almost petiolate. Cones depressed-globular, terminal, often clustered amongst numerous floral leaves, the innermost of which have hard dilated bases and small laminae, passing into the few outer bracts. Cone-scales linear or linear-lanceolate, very villous with long silvery or fulvous hairs. Perianth pink, very villous,  $\frac{3}{4}$  in. long. Style with a long clavate pubescent end, under a short almost glabrous brush.—Meissn. in Pl. Preiss. ii. 247, and in DC. Prod. xiv. 280; Bot. Mag. t. 3539; F. Muell. *Fragm.* vi. 240.

**W. Australia.** King George's Sound and neighbouring districts, *Baxter, Drummond, 3rd coll. n. 245*; Stirling Range, *F. Mueller*.

12. **I. roseus**, Lindl. *Bot. Reg.* 1842, *Misc.* 39. A bushy shrub of 1 to 3 or 4 ft., the young shoots tomentose-pubescent or sometimes densely villous, the adult leaves usually but not always glabrous. Leaves once or twice ternately divided or shortly pinnate, the segments linear or cuneate, entire or 3-lobed, rigid, flat, concave or channelled, acute but scarcely pungent, the whole leaf in some specimens scarcely 1 in., in others 2 to 3 in. long, including the petiole, which is often as long as the divided part. Cones terminal, globular, solitary and  $\frac{3}{4}$  to 1 in. diameter, or clustered and scarcely above  $\frac{1}{2}$  in. Outer bracts numerous, ovate-lanceolate, acuminate, imbricate, the inner ones almost concealing the scales. Outer cone-scales lanceolate, the inner ones linear, densely woolly outside but tapering into long glabrous or slightly hairy points. Perianth pink, 1 in. long, glabrous, tipped with small tufts of hairs. Style-end long-clavate, papillose-pubescent, separated by a short neck from the slightly bulbous base of the short nearly glabrous brush. Receptacle convex.—Meissn. n. in. DC. *Prod.* xiv. 279; F. Muell. *Fragm.* vi. 240; *I. seabe*, Meissn. in *Pl. Preiss.* i. 506, *Bot. Mag.* t. 4037, not of Lindl.; *Petrophila dubia*, R. Br. *Prot.* Nov. 7; Meissn. in DC. *Prod.* xiv. 276.

**W. Australia.** Swan river, Fraser, Drummond, 1st coll. n. 564, *Preiss.* n. 682, 686; Dunderagan and Toodyay, Oldfield.

13. **I. adenanthoides**, Meissn. in Hook. *Kew Journ.* vii. 69 and in DC. *Prod.* xiv. 278. A shrub with the aspect of an *Adenantheros* near *A. sericea* or of *Petrophila inconspicua*, the branches virgate, hirsute as well as the foliage with long fine spreading hairs. Leaves crowded, trifoliate, linear-terete, slender, acutely mucronate,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long. Cones terminal, densely surrounded by the floral leaves, depressed-globular, 4 to 5 lines diameter without the perianths. Outer bracts ovate, acute, softly villous outside, passing into the cone-scales of which the inner ones are narrow from slightly spatulate to linear-acuminate. Perianth glabrous, about 1 in. long. Style-end long-clavate, densely papillose-pubescent, with a slight constriction under the pubescent bulbous base of the narrow tapering almost glabrous brush. Receptacle convex.—F. Muell. *Fragm.* vi. 241.

**W. Australia.** Hills west of Moore river, Drummond, 6th coll. n. 171.

**SECT. 2. EUSTROBILUS.**—Cone-scales all with broad dilated or truncate ends, closely imbricated after flowering in an areolated globular or ovoid mass, often long persistent, but breaking up when the fruits fall. Receptacle convex conical or cylindrical.

14. **I. trilobus**, R. Br. in *Trans. Linn. Soc.* x. 72, *Prod.* 366. A rigid shrub of 1 to 2 ft., the branches and young shoots hoary-tomentose, the adult foliage glabrous or glaucous. Leaves on long petioles, cuneate and broadly 3- or 5-toothed at the end, or more or less deeply 3-lobed with broad and short lobes, all thick and obscurely veined, the whole leaf including the petiole 2 to 3 in. long. Cones terminal, sessile, ovoid-globular, very closely imbricate tomentose and  $\frac{3}{4}$  to 1 in. diameter

after flowering. Outer bracts not numerous, broad, acute or acuminate, shorter than the scales. Cone-scales acute when very young, after flowering broadly cuneate, truncate, thick and hard, 3 lines broad at the top, convex and densely woolly outside. Perianth shortly silky-pubescent, about 4 lines long. Style-end continuous and slightly fusiform, minutely and sparingly hairy on the angles, but scarcely forming a distinct brush. Receptacle oblong-conical.—Meissn. in DC. Prod. xiv. 280; *I. trilobus* var. *eloba*, F. Muell. Fragm. vi. 239; *Petrophila trifida*, Lodd. Bot. Cab. t. 1883, not of R. Br.

**W. Australia.** Lucky Bay, R. Brown, Baxter; Cape Howe, Thomas Brook, and E. Mount Barren, Maxwell.

15. ***I. tripartitus***, R. Br. Prot. Nov. 8. A shrub of 2 or 3 ft., glabrous except the cones, closely allied to *I. trilobus* and *I. longifolius*, with the same inflorescence, cones and flowers, and intermediate between the two in foliage, the leaves being nearly all deeply 3-lobed, with narrow lobes from  $\frac{1}{2}$  to 1 in. long.—Meissn. in Pl. Preiss. ii. 247, and in DC. Prod. xiv. 280; *I. trilobus* Meissn. in Pl. Preiss. i. 507; F. Muell. Fragm. vi. 239.

**W. Australia.** King George's Sound, Baxter, Drummond, 3rd coll. n. 246; north of Stirling Range, F. Mueller.

This species, united by F. Mueller with *I. trilobus*, seems to pass rather more gradually into *I. longifolius*, and the three might well be considered as varieties of one species, although in the majority of specimens they appear very distinct.

16. ***I. longifolius***, R. Br. in Trans. Linn. Soc. x. 73, Prod. 366. A shrub of 2 to 8 ft., glabrous except the cones or the young shoots minutely hairy. Leaves long, linear or oblanceolate, obtuse with a small callous or acute point, narrowed into a long petiole, thick, longitudinally veined, entire or deeply 2- or 3-lobed, mostly 4 to 6 in. long and sometimes twice as long including the petioles, the lower ones often short. Cones terminal, sessile, ovoid or at length globular,  $\frac{3}{4}$  to 1 in. diameter after flowering. Outer bracts not numerous, acuminate, shorter than the scales. Cone-scales when very young acuminate with narrow points, but after flowering broad and truncate with short points, thick and hard, very numerous and closely imbricate, densely tomentose on the convex back. Perianth yellow, silky-villous, about 5 lines long. Style-end continuous and narrow-fusiform, the thickened part 4-angled and glabrous at the base, the upper portion or brush minutely pubescent in longitudinal lines or glabrous. Receptacle oblong, often 1 in. long.—Meissn. in Pl. Preiss. i. 507, and in DC. Prod. xiv. 281; Bot. Reg. t. 900; F. Muell. Fragm. vi. 237.

**W. Australia.** King George's Sound and adjoining districts, R. Brown, Baxter, Drummond, n. 26, Preiss, n. 665, and many others; eastward to Salt river, Maxwell. These specimens in which most of the leaves are 3-lobed only differ from *I. tripartitus* in their greater length. The inflorescence flowers and fruit are the same in *I. trilobus*, *I. tripartitus*, and *I. longifolius*.

17. ***I. Drummondii***, Benth. A shrub with the branches and young shoots tomentose, the adult foliage glabrous. Leaves undivided, terete

with a callous point, rather thick, resembling those of *Petrophila teretifolia*, attenuate at the base,  $1\frac{1}{2}$  to 3 in. long. Cones terminal, at first depressed at length globular,  $\frac{1}{2}$  to 1 in. long, surrounded by numerous floral leaves. Outer bracts lanceolate, not numerous, not exceeding the scales and shorter than them in the fruiting cone. Cone-scales narrow, especially the inner ones and shortly acuminate, but more or less cuneate, densely villous outside, and after flowering their convex summits closely imbricate in a globular mass as in others of this section. Perianth scarcely 4 lines long, the tube usually pubescent, the laminae glabrous except a small tuft of hairs at the end. Style-end slightly clavate, minutely papillose-pubescent, separated by a very slight constriction from the pubescent slightly bulbous base of the otherwise glabrous but furrowed brush. Receptacle oblong.—*I. petrophiloides*, Meissn. in Pl. Preiss. i. 503, and in DC. Prod. xiv. 276, partly, but not of Br.

**W. Australia.** Swan river, Drummond, 1st coll., Preiss. The foliage of this species is nearly that of the undivided states of *I. teretifolia* and *I. seabeensis*, with the former of which (the *I. petrophiloides*, Br.) it may have been confounded by Meissner, as he quotes Baxter's specimens as well as Drummond's and Preiss's.

18. ***I. heterophyllum***, Meissn. in Pl. Preiss. i. 504, and in DC. Prod. xiv. 278. Glabrous when in fruit except a slight pubescence below the cone. Leaves terete, usually thickened upwards and incurved, acute, entire, bifid or trifid, rarely with one or two of the segments again divided, 2 to 3 in. long including the petiole. Cones terminal, sessile, ovoid-globular and  $\frac{3}{4}$  in. diameter when in fruit. Outer bracts broad, not numerous, villous outside. Cone-scales broadly cuneate, somewhat hardened and truncate when in fruit, very densely villous outside. Perianth not seen. Receptacle oblong. Coma of the nuts very long.

**W. Australia.** Drummond, n. 731, Preiss, n. 672. (I have only seen Drummond's specimens.)

19. ***I. villosus***, Meissn. in DC. Prod. xiv. 277. Stems very short, thick and woody, rarely 6 in. high, densely tomentose-villous. Leaves terete, rigid, repeatedly forked, 8 to 10 in. long including the long petioles, softly tomentose or at length almost glabrous, the segments divaricately and almost pungent-pointed. Cones ovoid, closely sessile within the leaves in a cluster of 3 or 4, each cone about 1 in. long without the perianths. Outer bracts few and short. Cone-scales cuneate, densely woolly outside, with long lanceolate-subulate plumose deciduous points. Perianth 8 to 9 lines long, very densely hirsute with spreading hairs. Style-end continuous, very shortly thickened and minutely pubescent under the nearly glabrous long and slightly thickened brush. Receptacle oblong, sometimes nearly 1 in. long.—F. Muell. Fragm. vi. 241.

**W. Australia,** Drummond, 5th coll. n. 399.

20. ***I. teretifolius***, R. Br. in Trans. Linn. Soc. x. 71, Prod. 305. A shrub of 2 to 4 ft., the young shoots silky-pubescent, the adult foliage glabrous. Leaves terete, rigid, in a few specimens all or nearly all

simple and 2 or 3 in. long, but usually once twice or even three times bifid or trifid, the segments usually divaricate, with callous or scarcely acute points. Cones terminal, sessile or nearly so but almost always more or less oblique or cernuous, rarely quite erect, depressed-globular,  $\frac{3}{4}$  to 1 in. diameter after flowering. Outer bracts broad, obtuse or with small recurved points, closely imbricate but rather shorter than the scales. Cone-scales obovate-cuneate, the convex closely imbricate ends densely tomentose, the remainder densely villous outside with fulvous hairs. Perianths very numerous, about  $\frac{1}{2}$  in. long, more or less villous, the laminae tipped with longer hairs. Style-end shortly clavate and pubescent, constricted into a short neck below the bulbous base of the glabrous linear or slightly tapering brush. Receptacle conical.—Meissn. in Pl. Preiss. i. 504, and in DC. Prod. xiv. 277; F. Muell. Fragm. vi. 241; *I. petrophiloides*, R. Br. Prot. Nov. 7 (specimens with all or nearly all the leaves entire); *I. cornigerus*, Lindl. S. R. App. 34 (specimens with the leaves but little divided).

**W. Australia.** King George's Sound and adjoining districts, frequent, *R. Brown*, *Baxter*, and many others; eastward to the Mounts Baaren, *Marwell*; northward to Quangon plains, *Preiss*, and towards Swan river, *Drummond*, 1st coll. (*Preiss*, n. 662, 668, 669, 675, and perhaps 681).

Amidst all the variations of foliage from simple to much divided, which being sometimes met with on one and the same bush, cannot serve to characterize definite varieties, this species may usually be at once recognised by the cernuous heads which I have not observed in any other *Isopogon*. There are however a few specimens in which this character is not very decided or in which the heads are quite erect, possibly from having become straightened in drying. In Brown's original specimens (from Baxter) of *I. petrophiloides* the heads are very cernuous, in those of his own collecting of *I. teretifolius* they are erect, in all others that I have seen with divided leaves, excepting one or two of Preiss's, they are decidedly cernuous.

**21. *I. anethifolius*, Knight.** *Prot.* 94. An erect shrub of 3 or 4 ft., glabrous except the cones. Leaves once or twice pinnate, with rather slender terete usually erect and crowded segments, acute but not pungent, often above 1 in. long. Cones terminal, sessile or shortly pedunculate within the floral leaves, ovoid, globular,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. diameter or even more when in fruit. Outer bracts numerous but small, mostly glabrous, more or less acuminate, the inner ones broad and with shorter points, all shorter than the scales. Cone-scales very numerous, their broad truncate tomentose ends closely imbricate in the fruiting cone, the concealed portion densely villous on the back with fulvous hairs. Perianth yellow, about  $\frac{1}{2}$  in. long, sparingly and shortly silky-hairy, with a tuft of longer hairs towards the end of the laminae. Style-end clavate, minutely and densely pubescent, separated by a short but rather deep constriction from the bulbous base of the brush. Receptacle cylindrical.—R. Br. in Trans. Linn. Soc. x. 71, Prod. 365; Meissn. in DC. Prod. xiv. 277; *Protea anethifolia*, Salisb. Prod. 48; *Protea acutifera*, Cav. Ic. vi. 33, t. 549; *Protea divaricata*, Andr. Bot. Rep. t. 465.

**N. S. Wales.** Port Jackson to the Blue Mountains, *R. Brown*, *Sieber*, n. 17, and many others.

22. **I. petiolaris**, A. Cunningham, in R. Br. Prod. Nov. 8. A low bushy or procumbent shrub, nearly allied to *I. anemonifolius*, the young shoots tomentose-pubescent, the adult foliage becoming glabrous. Leaves flat and ternately or pinnately divided as in *I. anemonifolius*, but more rigid and striate, the petioles usually 2 to 3 in. long, the segments divaricate, often pungent-pointed. Cones globular,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. diameter without the perianths, or from  $\frac{1}{2}$  to 1 in. when in fruit. Outer bracts few, rather broad, cuneate. Cone-scales broadly cuneate, very woolly outside but with longer points than in *I. anemonifolius*. Perianth scarcely 4 lines long, glabrous except the small terminal tufts, the tube short. Styles of *I. anemonifolius*.—Meissn. in DC. Prod. xiv. 279.

**Queensland.** North of Macintyre's Brook, A. Cunningham.

**N. S. Wales.** Paramatta, Woolls; New England, G. Stuart; Reedy Creek, C. Moore; between the Bogan and Buree rivers, A. Cunningham.

23. **I. anemonifolius**, Knight, Prod. 93. A shrub of 4 to 6 ft., glabrous except the cones or the branches and young shoots pubescent. Leaves on rather long petioles, once or twice trifid or pinnately divided, with linear or linear-cuneate entire or 2- or 3-lobed segments, usually diverging or falcate, mostly pungent-pointed, rather rigid and obscurely veined, the whole leaf 2 to 4 in. long and nearly as broad. Cones sessile, solitary or in clusters of 2 or 3 at the ends of the branches, nearly globular,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. diameter. Outer bracts numerous but mostly small and narrow. Cone-scales very numerous, woolly outside, the expanded truncate imbricate ends becoming glabrous with very minute points. Perianth yellow, 3 to 6 lines, glabrous except the terminal tufts of short hairs. Style-end clavate, minutely papillose-pubescent, separated by a short constriction from the bulbous base of the nearly glabrous brush. Receptacle oblong or cylindrical.—R. Br. in Trans. Linn. Soc. x. 72, Prod. 366; Meissn. in DC. Prod. xiv. 279; F. Muell. Fragm. vi. 238; Lodd. Bot. Cab. t. 1337; *Protea anemonifolia*, Salish. Prod. 48; Bot. Mag. t. 697; Andr. Bot. Rep. t. 332; *P. tridactylites*, Cav. Ic. vi. 33, t. 548.

**N. S. Wales.** Port Jackson to the Blue Mountains, R. Brown, Caley (with pubescent leaves), Sieber, n. 18, and Fl. Mist., n. 480, and many others.

Var. *tenuifolius*, F. Muell. Leaf-segments narrow-linear, short, channelled above like those of *I. formosus*.—Twofold Bay, F. Mueller, the specimens in fruit only.

Var. ? *pubiflorus*. Leaf-segments numerous, erect, long. Perianth slightly hirsute.—Sydney? Bynoe.

24. **I. ceratophyllum**, R. Br. in Trans. Linn. Soc. x. 72, Prod. 366. A low glabrous shrub, usually forming dense very prickly tufts under 1 in. high, but sometimes attaining 1 to 2 ft. Leaves crowded, on rather long petioles, flattened but undulate, ternately or pinnately divided into linear rigid intricately divaricate pungent-pointed segments, quite smooth or obscurely striate. Cones surrounded by numerous leaves, globular, about  $\frac{1}{2}$  in. diameter or nearly  $\frac{3}{4}$  in. when in fruit. Outer bracts ovate, glabrous, rather thin, imbricate and almost concealing the scales at the time of flowering. Cone-scales broad, villous

outside, the outer ones with short broad glabrous ends, all closely imbricate after flowering. Perianth rather above  $\frac{1}{2}$  in. long, the tube very slender and the laminae small, glabrous or with minute terminal tufts of hairs. Style-end clavate, minutely papillose-pubescent, contracted into a short neck below the bulbous base of the nearly glabrous brush. Receptacle ovoid-conical, rather short.—Meissn. in DC. Prod. xiv. 279; Hook. f. Fl. Tasm. i. 319; F. Muell. Fragm. vi. 238.

**Victoria.** Port Phillip, R. Brown; from the Glenelg river, Robertson, to Gipps' Land, F. Mueller; Wimmera, Dallachy.

**Tasmania.** Flinders' Island, Gunn; isles of Bass's Straits, Bynoe.

**S. Australia.** Mount Barker, Whittaker; St. Vincent's Gulf, Baudouin; Lofty Range, Guichen and Encounter Bays, F. Mueller.

**W. Australia?** King George's Sound, McLellan in *Herb. Hooker*, but perhaps some mistake.

25. **I. asper**, R. Br. *Prot. Nov.* 8. A shrub, sometimes low, with erect nearly simple branches of 1 to 2 ft., (Preiss and others), sometimes more branched and attaining several ft. (*Oldfield*), the branches pubescent, the foliage slightly seaceous. Leaves crowded, pinnate with the lower segments forked or 3-lobed, all the segments rigid, linear, flat or channelled, mostly acute, the whole leaf rarely above 1 in. long. Cones depressed-globular,  $\frac{1}{2}$  in. diameter without the perianths, terminal or on short axillary branches, forming dense leafy clusters at or near the ends of the branches. Floral leaves numerous, the inner ones with dilated petioles and smaller segments, passing into the ovate acuminate outer bracts, and the inner ones of these passing into the obovate spatulate cone-scales, which are villous outside with spreading ovate coloured glabrous points, the inner scales gradually narrower, all exceedingly numerous and closely imbricate after flowering. Perianth "red," glabrous, about  $\frac{1}{2}$  in. long or rather more. Style-end long and clavate, densely papillose-pubescent, separated by a short constriction from the slightly bulbous pubescent base of the brush which is minutely hirsute in longitudinal lines. Receptacle nearly globular.—Meissn. in Pl. Preiss. i. 505, and in DC. Prod. xiv. 278; *I. seaber*, Lindl. Swan Riv. App. 34, not of Bot. Mag.

**W. Australia.** Swan river, Drummond, 1st coll. n. 574; Colonial Church Grant, Preiss, n. 689; Hampden, Clarke; Gordon and Canning rivers, Oldfield.

26. **I. crithmifolius**, F. Muell. *Fragm.* vi. 239. Very closely allied to *I. formosus*, and perhaps one of its numerous varieties, but the leaves are, as in *I. roseus*, flattened though concave, once or twice terminately divided into linear or linear-cuneate entire or 2- or 3-lobed segments, sometimes very short but more frequently the petiole and the divided portion each from  $\frac{1}{2}$  to 1 in. long. Cones and flowers entirely of *I. formosus*.

**W. Australia.** Swan river, Drummond, 1st coll. n. 503 (with narrow leaf-segments), J. S. Roe (with short broad leaf-segments). Drummond's specimens are referred by Meissner to *I. roseus*, he having inadvertently, as pointed out by F. Mueller, overlooked the sectional difference in the structure of the cones.

27. **I. formosus**, R. Br. in *Trans. Linn. Soc.* x. 72, *Prod.* 366. A shrub low and bushy, or erect less branched and attaining 4 to 6 ft., the young shoots sometimes densely villous with soft spreading hairs, the adult foliage usually glabrous, the branches more or less tomentose. Leaves rather crowded, once, twice or three times ternately divided into narrow segments, terete or grooved, sometimes short divaricate rigid and pungent-pointed, sometimes longer more erect and acute only, the whole leaf rarely above 2 in. long. Cones terminal or rarely in the upper axils, sessile, globular or at length ovoid,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. diameter without the perianths, usually very villous. Outer bracts lanceolate or ovate-lanceolate, not exceeding the scales. Cone-scales cuneate, very villous outside, scarcely mucronate, closely imbricate after flowering. Perianth red, glabrous, but with small terminal tufts of hairs, about  $\frac{3}{4}$  in. long. Style-end narrow-clavate, contracted into a short neck below the pubescent bulbous base of the brush. Receptacle oblong,  $\frac{3}{4}$  to nearly 1 in. long.—Bot. Reg. t. 1288; Meissn. in Pl. Preiss. i. 506, ii. 247, and in DC. Prod. xiv. 278; F. Muell. Fragm. vi. 240.

**W. Australia.** King George's Sound and adjoining districts, very frequent, R. Brown, A. Cunningham, Drummond, n. 182, 185, coll. 2, n. 295, coll. 3, n. 247; Preiss, n. 683, 697, and many others, extending to Vasse river, Oldfield, and eastward to Cape Arid, Maxwell, the latter with rather smaller cones in the upper axils.

28. **I. divergens**, R. Br. *Prod. Nov.* 7. A glabrous shrub, either spreading and 1 to  $1\frac{1}{2}$  ft. high, or more bushy and attaining 3 or 4 ft. Leaves once or twice pinnately divided into rather slender though rigid terete segments, obtuse or mucronate, erect or spreading, the whole leaf rarely under 3 in. and often above 4 in. long. Cones terminal, ovoid, conspicuous for their long purple flowers, but the cones themselves never much above  $\frac{1}{2}$  in. diameter and  $\frac{3}{4}$  in. long. Outer bracts few and short. Cone-scales broadly cuneate, villous outside, the broad ends becoming glabrous in the old cones and closely imbricate. Perianth fully 1 in. long when well developed, shorter in a few specimens, glabrous except small terminal tufts. Style-end clavate, minutely but densely pubescent, separated by a slight constriction from the broadly bulbous base of the brush which is prominently ribbed and nearly glabrous. Receptacle oblong-cylindrical.—Meissn. in Pl. Preiss. i. 505, and in DC. Prod. xiv. 277; F. Muell. Fragm. vi. 241.

**W. Australia.** Swan river, Fraser, Drummond, 1st coll. n. 560, 573, Preiss, n. 667; Culjong, Murchison river, Oldfield.

29. **I. seabriuscus**, Meissn. in DC. Prod. xiv. 276. A much-branched rigid shrub, glabrous except the cones or the branches minutely pubescent. Leaves linear, terete or somewhat flattened and grooved or concave, mucronate, thick, undivided or very rarely shortly forked, 3 to 6 in. long. Cones globular or at length shortly ovoid, about  $\frac{1}{2}$  in. diameter, terminal or rarely also in the upper axils. Outer bracts broad, closely imbricate, tomentose outside, persistent and often hardening after flowering, passing into the scales which are narrower, very densely villous outside and mostly with minute glabrous tips.

Perianth rather above  $\frac{1}{2}$  in. long, glabrous or minutely pubescent besides the small tufts of hairs at the tips of the laminae. Style-end slightly clavate, minutely papillose-pubescent, separated by a slight constriction from the pubescent slightly bulbous base of the nearly glabrous brush. Receptacle ovoid-conical. —F. Muell. Fragm. vi. 240.

**W. Australia.** *Drummond*, 4th coll. n. 263. This species is in many respects allied to *I. Drummondii*, but the leaves are less terete, the perianth longer and more glabrous, although the cones themselves are smaller.

### 3. ADENANTHOS, Labill.

Flowers hermaphrodite. Perianth regular or nearly so, the tube slender, usually splitting more or less on the lower side; laminae equal, the perianth usually falling off entire, leaving a very short persistent annular base. Anthers all perfect and free or the lower one linear and sterile, sessile within the segments of the limb, the connective tipped with a small appendage. Hypogynous scales or glands 4, often shortly adnate at the base to the persistent perianth-ring but protruding beyond it. Ovary sessile, with a single laterally attached amphitropous ovule. Style elongated, usually arched and protruding above the middle from the slit of the perianth-tube before the end is set free by the opening of the limb, finally erect and longer than the perianth, usually attenuate below the end, which is more or less thickened or dilated elliptical or linear, with a stigmatic slit descending from the apex to the middle or nearly to the base of the lower side. Fruit a small oblong or rarely ovoid obtuse indehiscent nut (or drupe?) with a single erect seed.—Shrubs sometimes almost growing into small trees, sometimes low and prostrate, often silky-villous. Leaves entire or divided, often rather small and crowded, flat or terete, rarely rigid and pungent-pointed. Flowers red or greenish, terminal or axillary, each flower sessile within a short involucro of 4 to 8, usually 6, imbricate bracts, the inner ones the longest, the involucres solitary or in clusters of 3 or 4, shortly pedunculate or nearly sessile. Perianth usually pubescent or villous outside, the laminae bearded inside behind the anthers or in a few species almost beardless. Torus with a tuft of hairs round the ovary within the glands.

The genus is limited to Western extratropical Australia, and is not closely allied to any other one hitherto known, although with the inflorescence of the uniflorous species of *Lamertia*.

SECT. 1. **Euryläma.**—Perianth tube obliquely dilated and recurved above the middle. Lower anther linear and sterile. Style end ovoid or elliptical. Leaves flat, entire. Flowers axillary.

Leaves elliptical, oblong, or lanceolate,  $\frac{3}{4}$  to 2 in. long . . . . . 1. *A. barbigera*.  
Leaves obovate,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long . . . . . 2. *A. obovata*.

SECT. 2. **Stenoläma.**—Perianth tube nearly straight, not enlarged above the middle. Anthers all four perfect. Style end slightly thickened.

Flowers axillary. Young shoots hoary-tomentose.

Leaves flat, cuneate, toothed at the broad end . . . . . 3. *A. cuneata*.





Leaves divided into narrow linear, obtuse, flat, or concave segments . . . . .	4. <i>A. Cunninghamii.</i>
Leaves terete, rigid, pungent-pointed, entire, bifid or trifid . . . . .	5. <i>A. pungens.</i>
Flowers terminal. Leaves entire.	
Leaves sessile, obovate or broadly elliptical, $\frac{1}{2}$ to $\frac{3}{4}$ in. long . . . . .	6. <i>A. venosa.</i>
Leaves petiolate, oblong-linear or spatulate, under $\frac{1}{2}$ in. long . . . . .	7. <i>A. Dobsii.</i>
Leaves narrow-linear, $\frac{1}{2}$ to $1\frac{1}{2}$ in. long . . . . .	8. <i>A. linearis.</i>
Flowers terminal. Leaves divided into narrow terete, not pungent segments, usually crowded, at least round the flowers.	
Laminae of the perianth densely bearded inside behind the anthers. Shrubs usually tall and erect.	
Leaves not very dissimilar. Perianth fully 1 in. long.	
Perianth silky-villous outside . . . . .	9. <i>A. sericea.</i>
Perianth sparingly glandular-pubescent outside . . . . .	10. <i>A. Meissneri.</i>
Floral leaves usually twice as long as those on the branches, all filiform. Perianth $\frac{3}{4}$ in. long, the tube nearly glabrous, the laminae hairy . . . . .	11. <i>A. filifolia.</i>
Laminae of the perianth glabrous inside, or with few hairs behind the anthers. Shrubs usually procumbent.	
Perianth 1 in. long, sparingly glandular pubescent . . . . .	10. <i>A. Meissneri.</i>
Perianth $\frac{3}{4}$ in. long, pubescent or villous. Stem-leaves short and appressed; floral ones twice as long . . . . .	12. <i>A. terminalis.</i>
Perianth $\frac{3}{4}$ in. long, villous, the laminae yellow-plumose. Leaves very silky . . . . .	13. <i>A. flavidiflora.</i>
Perianth $\frac{3}{4}$ in. long, villous with short hairs. Leaves very fine, the floral ones much longer than the others . . . . .	14. <i>A. apiculata.</i>

SECT. I. EURYLEMA.—Perianth-tube very obliquely dilated and recurved above the middle. Lower anther (on the back of the style) linear and sterile. Style-end ovate or elliptical, compressed, the stigmatic slit descending along the centre of the upper face. Leaves flat, entire. Flowers axillary.

1. ***A. barbigera***, Lindl. *Swan Riv. App.* 36. Stems erect, nearly simple and 1 to 2 ft. high, or with several erect virgate branches and attaining 3 or 4 ft., tomentose-pubescent and hirsute with long fine hairs, the adult foliage often glabrous. Leaves from elliptical-oblong and under 1 in. to lanceolate and 2 in. or linear-lanceolate and nearly 3 in. long, obtuse or with a callous point, contracted into a very short petiole, prominently veined, the primary veins few and almost longitudinal. Peduncles solitary in the axils, 1 to 3 lines long. Bracts lanceolate, acute, villous, the inner ones often  $\frac{1}{2}$  in. long. Perianth villous with fine hairs, rather above 1 in. long, the tube dilated and recurved above the middle, the short laminae long-cohering, the 3 upper segments ultimately separating to about  $\frac{1}{3}$  of the perianth, each with a perfect anther in the lamina, the lower segment with a sterile anther and separating lower down. Style glabrous or sparingly bearded with fine hairs, the dilated end elliptical, compressed but thick, the stigmatic slit descending to about half way down the inner face and bordered by slightly raised margins.—Meissn. in Pl. Preiss. i. 510 and in DC. Prod. xiv. 311.

**W. Australia.** Swan river, Drummond, 1st coll. n. 591, Preiss, n. 792; Harvey: Gordon and Harvey rivers, Oldfield

**2. A. obovata**, *Labill. Pl. Nov. Holl.* i. 29, t. 37. A shrub of 3 or 4 ft. with erect virgate branches, glabrous or minutely hoary-pubescent when young. Leaves rather crowded, entire, obovate, obtuse or with a callous point, contracted at the base but usually sessile,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long, obscurely 3-nerved, the nerves converging at the apex and usually visible only on the under side. Peduncles axillary, solitary, 1 to 2 lines long. Inner bracts 2 to 3 lines long and almost acute, outer ones short and obtuse. Perianth about 1 in. long, silky-pubescent or villous, the tube dilated above the middle, then recurved and constricted at the base of the laminae. Lower anther linear and sterile. Style bearded with few hairs, the dilated end broadly elliptical, compressed but thick, the stigmatic slit descending about half way down the upper face and bordered by raised margins. Fruit oblong, obtuse, about 3 lines long, glabrous or nearly so.—R. Br. in *Trans. Linn. Soc.* x. 151; Prod. 367; Meissn. in *Pl. Preiss.* i. 511, and in DC. Prod. xiv. 311.

**W. Australia.** King George's Sound and neighbouring districts, *Labillardière*; R. Brown, *A. Cunninghamii*, and many others; Backwood river, *Oldfield*; Swan river? *Drummond*, 1st coll. n. 592; near Guildford, *Preiss.* n. 790.

**SECT. 2. STENOLEMA.**—Perianth-tube nearly straight, not enlarged above the middle. Anthers all four perfect. Style-end slightly thickened, not compressed, the stigmatic slit or line descending down the upper side.

Meissner describes one anther as abortive in *A. cuneata* and in *A. Meissneri*, which must have been accidental in the flowers examined. I have found all four perfect in all the buds I opened in both species as in all others of this section.

**3. A. cuneata**, *Labill. Pl. Nov. Holl.* i. 28, t. 36. A shrub of 3 to 6 ft., the branches and foliage silky-tomentose. Leaves cuneate, the broad end truncate, with 3 to 7 obtuse crenatures, contracted at the base into a short petiole, the whole leaf  $\frac{3}{4}$  to 1 in. long, rather thick, veinless or obscurely 3- or 5-nerved. Peduncles solitary in the axils, slender, often longer than the petioles. Bracts acute, the inner ones enlarged to 3 lines long under the fruit. Perianth about 1 in. long, silky-pubescent, the tube slender and straight or slightly enlarged below the middle after flowering, the laminae bearded inside behind the anthers which are all perfect. Style-end scarcely thickened. Fruit oblong, about  $\frac{1}{2}$  in. long.—R. Br. in *Trans. Linn. Soc.* x. 152; Prod. 367; Meissn. in *Pl. Preiss.* i. 511, ii. 247 and in DC. Prod. xiv. 312; *A. flabellifolia*, Knight, Prot. 96; *A. crenata*, Willd. in *Spreng. Syst.* i. 472.

**W. Australia.** King George's Sound and adjoining districts, *Labillardière*; R. Brown, *Drummond*, 3rd coll. n. 245, *Preiss.* n. 793, and others; eastward to Philip's river and Eyre's Relief, *Maxwell*.

**4. A. Cunninghamii**, Meissn. in *Pl. Preiss.* i. 513, and in DC. Prod. xiv. 313. A tall erect shrub, the branches and foliage tomentose and often sprinkled with a few fine spreading hairs, the older leaves less tomentose but hoary. Leaves crowded, once or twice trifid or pinnate

with few rather long linear segments, narrow but flat or concave and mostly obtuse, the whole leaf 1 to 2 in. long including the short petiole. Involucres solitary in the axils, on peduncles of 2 to 3 lines. Bracts acute, silky-hairy, the inner ones 2 lines long. Perianth about 1 in. long, silky-villous, the tube straight. Anthers all perfect. Style-end slender.

**W. Australia.** King George's Sound, Fraser; in the interior, Preiss, n. 2621 (Meissner). I have not seen Preiss's specimen; all others, which I have seen in different collections, appear to have originated in a shrub raised in the Sydney Botanic Garden from Fraser's seeds.

**5. A. pungens**, Meissn. in *Pl. Preiss.* i. 515, ii. 248, and in *DC. Prod.* xiv. 313. A rigid bushy or spreading shrub, the young shoots hoary-tomentose, the adult foliage glabrous. Leaves terete, slightly grooved above, entire or divaricately bifid or trifid above the middle, rather thick, rigid and pungent-pointed,  $\frac{3}{4}$  to 1 $\frac{1}{2}$  in. long. Involucres solitary in the upper axils, sometimes rather crowded towards the ends of the branches, on peduncles of 1 to 2 lines. Bracts softly silky-villous, the inner ones about 1 $\frac{1}{2}$  lines long. Perianth rather under 1 in. long, silky-villous. Anthers all perfect. Style slightly hairy, the end scarcely thickened. Fruit oblong, 2 to 3 lines long.—*A. armata*, Meissn. in *DC. Prod.* xiv. 313.

**W. Australia**, Drummond, 3rd coll. n. 256 (with the leaves mostly, but not all, undivided), 5th coll. n. 400 (with the leaves mostly, but not all, 3-fid); in the interior, Preiss, n. 671 (Meissner). Meissner distinguishes *A. armata* from the divided-leaved specimens of *A. pungens*, by the leaves divided to below the middle and by the laminæ of the perianth segments longer in proportion, neither of which characters holds good in our specimens, all from Drummond; I have not seen Preiss's.

**6. A. venosa**, Meissn. in *DC. Prod.* xiv. 311. A bushy shrub of 3 or 4 ft., the branches and young shoots softly and often densely villous, the older foliage nearly glabrous. Leaves crowded under the flowers, more distant along the branches, sessile, entire, obovate or broadly elliptical, shortly acuminate or mucronate-acute, narrowed at the base, often ciliate on the margins,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long, often coriaceous, more or less prominently marked with almost longitudinal veins, the floral ones often rather larger than those below them. Involucres in terminal clusters or umbels of 3 to 6, rarely solitary, on short peduncles; bracts 4 to 6. Perianth about 1 in. long, slender, glandular-hirsute. Anthers all perfect. Style-end scarcely thickened.

**W. Australia**, Drummond, 4th coll. n. 264; in the interior from Cape Le Grand and summit of W. Mount Barren, Maxwell.

**7. A. Dobsoni**, F. Muell. *Fragm.* vi. 204. A prostrate much-branched shrub, spreading to 1 or 2 ft. diameter, the young shoots silky-hairy, the older foliage glabrous. Leaves entire, oblong-linear or spatulate, mostly under  $\frac{1}{2}$  in. long, very obtuse, narrowed into a distinct petiole. Involucres terminal, solitary, on very short peduncles; bracts obtuse, the inner ones about 1 $\frac{1}{2}$  lines long. Perianth slender,

8 to 9 lines long, silky-pubescent. Anthers all perfect. Style-end scarcely thickened.

**W. Australia.** Point Malcolm, *Maxwell*.

8. **A. linearis**, Meissn. in DC. Prod. xiv. 311. Apparently procumbent, with slender branching stems of above 1 ft., the young shoots silky-pubescent and hirsute with long fine hairs, the older foliage glabrous. Leaves entire, narrow-linear, obtuse, attenuate at the base, rather thick but flat,  $\frac{1}{2}$  to  $1\frac{1}{2}$  in. long. Involucres solitary or 2 or 3 together at the ends of the branches, on peduncles of about 1 line; inner bracts nearly 2 lines long. Perianth 6 to 7 lines long, softly hairy. Anthers all perfect. Style sparingly bearded, the end narrow-oblong.

**W. Australia**, *Drummond*, 4th coll. n. 265.

9. **A. sericea**, Labill. Pl. Nov. Holl. i. 29. t. 38. A tall shrub or small tree of 10 to 20 ft., the branches and foliage softly silky-pubescent or villous with soft appressed or longer or spreading hairs. Leaves crowded, very shortly petiolate, twice ternately or pinnately divided into linear-terete almost filiform segments, often ending in small glabrous gland-like tips and sometimes the lower segments short, as if mutilated, with dilated almost peltate gland-like tips, the whole leaf 1 to  $1\frac{1}{2}$  in. long, the floral ones often rather longer than the others. Involucres terminal, solitary or rarely 2 or 3 together, almost concealed by the foliage, on peduncles of about 1 line, the bracts silky-pubescent, the inner ones 2 lines long. Perianth above 1 in. long, silky-villous, slender, the laminae densely bearded inside behind the anthers which are all perfect. Style glabrous, the end slightly thickened.—R. Br. in Trans. Linn. Soc. x. 152, Prod. 367; Meissn. in Pl. Preiss. i. 513, ii. 248, and in DC. Prod. xiv. 312; *A. apiculata*, Meissn. in Pl. Preiss. i. 514, and in DC. l.c. 313, not of R. Br.

**W. Australia.** King George's Sound and adjoining districts, *Labillardière*, R. Brown, and many others, and thence towards Swan river, *Drummond*, 1st coll. 3rd coll. n. 255, *Preiss*, n. 787, 788, and others, and eastward to Cape Arid, *Maxwell*.

The specimens of Drummond's and Preiss's referred by Meissner to *A. apiculata* appear to me to be undistinguishable from the common *A. sericea*, except perhaps in the rather more rigid foliage with more spreading hairs, but even this distinction is very inconstant. I have not seen in any of them the truly lateral gland at the ends of the leaf-segments as in the true *A. apiculata*, Br. (*A. procumbens*, Meissn.).

Var.? *brevifolia*. Leaves rather shorter but silky-villous and the perianth-laminae densely bearded inside as in the typical *A. sericea*.—*A. barbata*, F. Muell. Herb.

**S. Australia.** Kangaroo Island, F. Mueller, Waterhouse.

The four following species may perhaps hereafter prove to be varieties only of *A. sericea*.

10. **A. Meissneri**, Lehm. Pl. Preiss. i. 512, ii. 248. A procumbent or irregularly spreading shrub of 3 or 4 ft., the branches pubescent or villous, the foliage hirsute pubescent or almost glabrous. Leaves mostly twice trifid but varying either more divided or less so, with terete rather rigid segments, more spreading than in *A. sericea* and

mostly short, the whole leaf often scarcely above  $\frac{1}{2}$  in. long, those clust red round the flowers however usually twice as long and often plumose at the base. Involucres terminal, usually 3 or 4 together. Perianth  $\frac{3}{4}$  to 1 in. long, glandular-pubescent and not silky, the laminæ with few hairs inside behind the anthers which are all perfect.—Meissn. in DC. Prod. xiv. 312.

**W. Australia.**, Drummond, 2nd coll. n. 301, Preiss, n. 791; Point d'Entre-causeaux, Walcott; Cape Leschenault and near Bunbury, Oldfield.

Var. *velutina*. Softly and densely villous, leaves rather longer and the laminæ of the perianth more bearded inside, showing an approach to *A. sericea*, but the perianth glandular-pubescent only outside as in the typical *A. Meissneri*.—*A. velutina*, Meissn. in DC. Prod. xiv. 312.—W. Australia, Drummond, 4th coll. n. 266.

11. **A. filifolia**, Benth. A shrub of 5 or 6 ft. with pubescent branches. Leaves glabrous or nearly so, twice or even thrice pinnately divided into filiform segments, those of the stem-leaves short, those of the floral leaves much longer and slightly plumose at the base, the whole leaf on the branches not above  $\frac{1}{2}$  in. long, round the flowers  $\frac{3}{4}$  to 1 in., all glandular at the point. Involucres terminal, solitary or 2 or 3 together. Perianth fully  $\frac{3}{4}$  in. long, the tube somewhat angular, glabrous or slightly hairy in the upper part, the laminæ darker coloured, hairy outside, bearded inside behind the anthers which are all perfect.

**W. Australia.** Stirling Range, F. Mueller; Kojonerup hills, Maxwell.

Var. *sericifolia*. Leaves silky-pubescent.—W. Australia, Drummond, n. 69.

12. **A. terminalis**, R. Br. in Trans. Linn. Soc. x. 152, Prod. 367. A procumbent shrub, extending to 3 or 4 ft., tomentose-pubescent and more or less sprinkled with fine spreading hairs. Leaves divided into 3 to 7 linear-terete segments, those along the branches usually appressed and 3 to 5 lines long, those around the flowers crowded and twice as long. Involucres terminal, solitary or 2 or 3 together, the inner floral leaves less divided with a dilated ciliate petiole, or even reduced to a simple filiform leaf. Bracts plumose at the base. Perianth about  $\frac{3}{4}$  in. long, hirsute outside. Anthers all perfect, with very few hairs on the perianth-laminæ behind them. Style-end slender.—Meissn. in DC. Prod. xiv. 313; Endl. Iconogr. t. 110.

**Victoria.** Wimmera, Dallachy; N.W. districts, L. Morton.

**S. Australia.** Port Lincoln, R. Brown; Onkaparinga and Encounter Bay, F. Mueller; Penola, Woods; Kangaroo Island, F. Mueller.

Preiss's West Australian specimens here included by Meissner are probably referrible to some of the varieties of *A. sericea*. The only ones I have seen are in leaf only.

13. **A. flavidiflora**, P. Muell. Pragm. i. 157. A procumbent much branched shrub, the branches and foliage silvery-tomentose and more or less hirsute with spreading hairs. Leaves divided into 3 to 7 linear-terete obtuse segments without terminal glands, those along the branches  $\frac{1}{2}$  to nearly  $\frac{1}{2}$  in. long, those crowded round the flowers nearly  $\frac{3}{4}$  in. Involucres terminal, solitary or clustered, on very short pedicels, the bracts silky-hairy. Perianth  $\frac{3}{4}$  in. long, villous outside, the laminæ

densely plumose outside with yellow hairs, glabrous inside or nearly so. Anthers all perfect. Style-end narrow..

**W. Australia.** North of Stirling Range, *F. Muell. r*; W. Mount Barren, *Marwell*.

14. **A. apiculata**, *R. Br. Prot. Nov. 9, not of Meissn.* A procumbent shrub spreading to 2 or 3 ft., the branches slender, silky-villous when young. Leaves divided into 3 to 5 filiform segments usually with a depressed lateral gland at the end, those of the branches often short and nearly glabrous, the floral leaves crowded, often 1 in. long, and ciliate with a few long fine glabrous hairs. Involucres 2 or more together in terminal clusters and nearly sessile, the bracts nearly glabrous. Perianth not above  $\frac{1}{2}$  in. long, villous with short spreading hairs, the laminae glabrous inside or with very few hairs behind the anthers which are all perfect. Style-end oblong.—*A. procumbens*, Meissn. in Pl. Preiss. i. 512, ii. 248, and in DC. Prod. xiv. 312; *A. Drummondii*, Meissn. in Pl. Preiss. i. 514, and in DC. Prod. xiv. 313.

**W. Australia.** King George's Sound or to the eastward, *Baxter*, *Preiss*, n. 589; towards Cape Riche, *Harney*; between Swan river and King George's Sound, *Drammond*, 1st coll. n. 593, 3rd coll. n. 253.

Independently of the fine nearly glabrous foliage and lateral glands (which are not quite constant), this species is readily distinguished from the four preceding ones by the short flowers.

#### 4. STIRLINGIA, Endl.

(*Simsia*, *R. Br. not of Pers.*)

Flowers hermaphrodite or male by abortion. Perianth regular, the tube cylindrical, at length separating into distinct segments, recurved above the middle. Anthers all perfect, erect on short thick filaments below the base of the laminae, cohering round the style when the flower first opens, at length recurved with the perianth-segments, the cells of each anther separated by a broad connective, and the two adjoining cells of two adjoining anthers applied face to face in the bud so as to form a single cell. No hypogynous scales. Ovary sessile, with a single anatropous ovule erect from the base; style filiform with a terminal obtuse or dilated and peltate stigma. Fruit a small dry indehiscent nut, usually broadly obovoid or oboconical with a convex or nearly flat top, hirsute all over, the upper hairs usually longer forming a coma.—Undershrubs or shrubs usually glabrous, branching and leafy at the base. Leaves dichotomous or rarely trifid only. Peduncles terminal, leafless, long and simple or more or less branched and paniculate. Flowers small, in globular spikes or heads terminating the branches of the panicle, each flower sessile within a small bract, the rachis or receptacle cylindrical ovoid or short, usually villous.

The genus is limited to extratropical W. Australia. By the curious conformation of the anthers it connects the *Proteaceæ* with the *Conospermeæ*.

Leaf-segments terete, filiform or rigid.

Bracts narrow, from half as long to nearly as long as the perianth-tube. Peduncles single-headed or rarely divided into 2 or 3 single-headed branches.

Peduncles solitary or few, 1 to  $1\frac{1}{2}$  ft. long . . . . . 1. *S. simplex*.





- Peduncles usually several, 2 to 4 in. long . . . . . 2. *S. abrotanoides*.  
 Bracts broad, ciliate, imbricate in the young spike, as long as  
     the perianth-tube. Panicle loose . . . . . 3. *S. teretifolia*.  
 Bracts minute, broad. Panicle loose or many-headed . . . . . 4. *S. tenuifolia*.  
 Leaf-segments flat, linear to oblong-lanceolate. Panicles much-  
     branched, the ultimate peduncles short . . . . . 5. *S. latifolia*.

**1. S. simplex**, Lindl. *Spec. Lec. App.* 30. Leafy stems short. Leaves several times di- or tri-chotomous, with slender filiform seg-  
 ments, exceedingly fine and erect when young, but at length more rigid  
 and spreading, the whole leaf 1 to 2 in. diameter on a petiole of 2 to 6  
 in. Peduncles simple or with one or two branches near the base, 1 to  
 1½ ft. long, bearing a single spike of numerous flowers condensed into  
 a globular head of ½ to ¾ in. diameter. Bracts very small, lanceolate,  
 acuminate, the inner ones almost subulate. Perianth about 4 lines long,  
 the lamina but little more than 1 line. Stigma not so broad as in some  
 species.—Meissn. in Pl. Preiss. i. 516, and in DC. Prod. xiv. 326; *S. capillifolia*, Meissn. in Hook. Kew Journ. vii. 70, and in DC. l.c. (some  
 specimens of the latter with the long pedicels rather more branched).

**W. Australia.** Swan river, *Drummond*, 1st coll. n. 553, Preiss, n. 772; between  
 Moore and Murchison rivers, *Drummond*, 6th coll. n. 173.

**2. S. abrotanoides**, Meissn. in Pl. Preiss. i. 517, and in DC. Prod.  
 xiv. 326. Stems rather slender, leafy to the inflorescence, simple or  
 branched, about 1 ft. high. Leaves smaller and less divided than in  
 the other species, on short petioles, the segments terete, slender, erect,  
 the whole leaf rarely exceeding 1 in. Peduncles terminal and in the  
 upper axils, single-headed but often numerous, 2 to 4 in. long. Flowers  
 rather numerous in the spike or head. Bracts lanceolate, acuminate, at  
 least half as long as the perianth-tube.

**W. Australia.** Swan river, *Drummond* 1st coll. n. 587, Preiss, n. 2622; Calin-  
 yong, *Oldfield* (in a very imperfect state). The above character is taken from Drum-  
 mond's specimens quoted by Meissner, in which the bracts are certainly narrow.  
 Meissner describes them as ovate and minute, probably from Pfeil's specimen which I  
 have not seen. There may be therefore some doubt as to the identity of the two, at  
 least as varieties.

**3. S. teretifolia**, Meissn. in Pl. Preiss. i. 515, and in DC. Prod. xiv.  
 325. Stems erect or ascending, branching and leafy at the base. Leaves  
 dichotomous, with rather rigid erect terete segments, the divided part  
 of the leaf 1 to 2 in. long, on a petiole about as long. Spikes or heads  
 globular, not ½ in. diameter, in a loose but rather rigid panicle, the ult-  
 imate peduncles often several in. long and always longer than the spike.  
 Flowers rather numerous. Rhachis ovoid, villous. Bracts ovate, rigid,  
 often ciliolate, as long as the perianth-tube and a few of the outer ones  
 empty or with sterile flowers, forming an involucre under the expanded  
 spike. Perianth about 2 lines long, the tube scarcely longer than the  
 laminae. Stigma slightly peltate. Summit of the nut convex, with  
 silvery shining hairs.—*S. affinis*, Meissn. in Pl. Preiss. i. 516, and in  
 DC. l.c.

**W. Australia.** King George's Sound or to the eastward. *Baxter*, *Drummond*,  
 4th coll. n. 267, Preiss, n. 770.

**4. *S. tenuifolia*, Endl. Gen. Pl. Suppl. iv. 81.** Leaves on rather long petioles, crowded at the base of the plant, or on a more or less elongated leafy stem, repeatedly dichotomous, the segments terete, divaricate, very fine in the typical form, sometimes all under  $\frac{1}{2}$  in. long, more frequently about  $\frac{1}{2}$  in. or longer. Panicle leafless, sometimes few-headed and scarcely exceeding the leaves, more frequently rather loose and 6 in. to 1 ft. long. Spikes or heads on slender peduncles, rather small. Flowers pale yellow, 8 to 20 in the spike. Bracts very small, ovate, acute. Perianth 2 to  $2\frac{1}{2}$  lines long, constricted under the limb. Stigma capitate or slightly peltate. Nuts densely comose.—Meissn. in DC. Prod. xiv. 326; *Simsia tenuifolia*, R. Br. in Trans. Linn. Soc. x. 152, Prod. 368; *Stirlingia anethifolia*, Endl. Iconogr. t. 23, Meissn. in Pl. Preiss. i. 516, and in DC. Prod. xiv. 326.

**W. Australia.** King George's Sound and adjoining districts, *R. Brown*, *Harvey*, *Drummond*, 4th coll. n. 263, *Preiss*, n. 771, *Oldfield*, *F. Mueller*; Mount Melville, *F. Mueller* (small specimens not above 6 in. high and flowering the first year so as to appear annual).

Var. *anethifolia*. Leaves more rigid, panicle of fewer spikes on shorter peduncles, but the bracts not perceptibly different.—*Simsia anethifolia*, R. Br., in Trans. Linn. Soc. x. 153, Prod. 368; *Stirlingia intricata*, Meissn. in DC. Prod. xiv. 325.—Towards Cape Riche, *Baxter*, *Harvey*, *Drummond*, 4th coll. n. 269; Lucky Bay, *R. Brown*; thence to Cape Arid, *Maxwell*.

**5. *S. latifolia*, Steud. Nom. Bot. ed. 2.** An undershrub, the leafy stems rarely 1 ft. high, simple or branching, the leafless peduncle including the panicle 1 to  $1\frac{1}{2}$  ft. long. Leaves once or twice bifid or trifid, with flat rigid vertical segments, broadly linear or narrow-lanceolate and 2 to 4 in. long in the typical specimens, the whole leaf then 6 in. to 1 ft. long, narrow-linear and 1 to 2 in. long in some Swan River specimens, cuneate-oblong 2 to 4 in. long and  $\frac{1}{2}$  to 1 in. broad in others, all with a small callous point but rounded at the end when broad. Panicle oblong, usually much branched, with minute bracts under the branches. Spikes or heads globular, very numerous, on peduncles of 1 to 3 lines. Bracts very short, broad, truncate. Perianth varying in different specimens from scarcely 2 lines to fully 3 lines long, "of a greenish yellow, reddish at the base." Stigma broadly peltate, undulate. Nut broadly turbinate, densely comose.—Meissn. in Pl. Preiss. i. 517, and in DC. Prod. xiv. 326; *Simsia latifolia*, R. Br. Prot. Nov. 9; *Stirlingia paniculata*, Lindl. Swan Riv. App. 30; Meissn. II. cc.

**W. Australia.** King George's Sound, *Baxter*, *Preiss*, n. 769, *F. Mueller*, and others, and thence to Swan river, *Drummond*, 1st coll., *Preiss*, n. 767, *Oldfield*; Murchison river, *Oldfield*.

The species is very variable as to ramification, the size and breadth of the leaf-segments and the size of the flowers; the extreme forms I have seen are represented by *Preiss*'s, n. 767, from Swan river, with rather small linear-lobed leaves and small flowers, and by *Drummond*'s from the same locality, with large broad-lobed leaves and large flowers; the typical King George's Sound specimens are intermediate between the two, perhaps nearer to the latter than to the former, and there are many intermediates. In several flowers I observed the ovary abortive, with a short style and no stigmatic dilatation.





TRIBE 2. CONOSPERMEÆ.—Anthers: one with 2 perfect cells, two with 1 perfect and 1 abortive cell, the fourth abortive, the perfect cells broad, concave, erect, without any connective, the adjoining ones of distinct anthers applied face to face, so as to form in the bud one cell; all on very short thick filaments at the base of the laminae or summit of the perianth-tube. Ovule 1. Fruit a dry nut.

### 5. SYNAPHEA, R. Br.

Flowers hermaphrodite. Perianth oblique or incurved, the tube short, the segments separating, the upper one with an erect ovate or oblong lamina, the three others usually shorter and more spreading. Stamens inserted at the base of the laminae, the filaments short and thick. Anthers of the lowest stamen with two distinct cells, of the lateral stamens with one cell each, the cells concave, each one of the lateral anthers when in bud facing the adjoining one of the lower anthers and forming but one cell with it, but separating as the flower opens; the upper anther abortive and replaced by a small membrane connecting the filament with the posterior margin of the stigma. Ovary 1-celled, crowned by a tuft of gland-like hairs, with one laterally attached ovule. Style filiform, dilated at the end into an oblique disk, stigmatic on its upper surface which is turned towards the upper perianth-lobe and retained in that position by the membrane connecting it with the filament, the anterior margin of the disk often lobed or 2-horned. Fruit a small indehiscent nut.—Shrubs or undershrubs. Leaves all, or in one species only the lower ones, on long petioles with a sheathing scale-like dilatation at the base, the lamina entire or divided, with few primary veins, pitted all over by minute reticulations. Flowers small, yellow, in spikes often at first dense at length elongated, each one sessile within a small concave bract, the common peduncle simple or branched, often very long, inserted in the axil of a rather large sheathing scale, being the base of an abortive leaf.

The genus is limited to extratropical West Australia, very distinct as a whole from all others, but difficult as to the discrimination of species. With the exception of *S. polymorpha* and *S. pinata*, the foliage is almost as variable in a single individual as in the whole group of species, and the habit, inflorescence, perianths, and stamens are nearly uniform; there remains therefore, besides minor differences in indumentum and the size of the flowers, very little of specific distinction except the modifications of the stigma or stigmatic end of the style, and even these are sometimes not very well defined.

Spikes simple, not exceeding the shortly petiolate floral leaves . . . 1. *S. polymorpha*.  
Leaves all on long petioles. Flowering branches long, leafless,  
and usually branched.

Stigma 2-horned.

Base of the petioles hirsute. Spike pubescent. Leaves mostly  
entire or shortly lobed . . . . . 2. *S. dilatata*.

Whole plant glabrous or the base of the petioles slightly silky. . . . . 3. *S. favosa*.

Leaves except the lowest deeply lobed or divided . . . . .

Stigma produced into a single oblong incurved entire or 2-lobed  
appendage. Leaves with long diverging lobes . . . . .

4. *S. Preissii*.

- Stigma produced into a short broad notched or 2 lobed appendage. Leaf-lobes short, divaricate, pungent-pointed. Flowers small . . . . . 5. *S. acutiloba*.
- Stigma with 2 broad lateral lobes, sometimes shortly confluent. Flowers small. Leaf-lobes long. Glabrous or nearly so . . . . . 6. *S. petiolaris*.
- Base of the petiole hirsute and spike pubescent as in *S. dilatata*. Stigma broad without lobes or appendages. Leaf-segments long, distinct, almost petiolulate . . . . . 7. *S. decorticans*.
8. *S. pinnata*.

**1. *S. polymorpha*, R. Br. in Trans. Linn. Soc. x. 156, Prod. 370.** Stems leafy, 1 to 2 ft. high, rigid, usually more or less silky especially about the base of the petioles, the adult foliage glabrous. Lower leaves on long petioles, entire or cuneately 3-lobed as in several of the following species, but the upper ones numerous, shortly petiolate, once or twice deeply divided into 2- or 3-lobed or toothed segments, the whole leaf spreading to 2 or 3 in. diameter, the lobes mostly pungent-pointed, broad or narrow, the small reticulations less prominent than in most species. Spikes simple, pubescent, rarely exceeding the leaves. Perianth 2½ to 3 lines long. Stigma produced into an oblong or linear entire or emarginate incurved appendage as in *S. Preissii*. Nut obovoid-oblong, shortly stipitate.—Meissn. in Pl. Preiss. i. 529, and in DC. Prod. xiv. 315; *S. brachystachya*, Lindl. Swan Riv. App. 32; Meissn. in Pl. Preiss. i. 530, and in DC. l.c. 316.

**W. Australia.** King George's Sound and adjoining districts, R. Brown and many others, and from thence to Swan river, Drummond, 1st coll. n. 590, Preiss, n. 774, 776, and others, and to Murchison river, Oldfield; eastward to Cape Arid, Maxwell.

**2. *S. dilatata*, R. Br. in Trans. Linn. Soc. x. 156, Prod. 370, and App. Flind. Voy. ii. 606, t. 7.** Stems very short or decumbent and lengthening out to 1 or even 1½ ft., more or less clothed as well as the petioles, at least when young, with long spreading hairs. Leaves all on long petioles, from cuneate-oblong and entire to broadly cuneate and once or twice 3-lobed or rarely irregularly pinnatifid, the lumina 2 to 4 in. long, usually 1- or 3-nerved when entire, the small reticulations conspicuous. Spikes simple or branched, sometimes only 2 or 3 in., sometimes above 1 ft. long including the peduncle, always more or less silky-villous. Flowers at first dense, but remote when the rhachis elongates. Bracts broad, 1 to 1½ lines long. Perianth pubescent, 3 to 4 lines long. Ovary crowned by a tuft of thick transparent hairs. Stigma anteriorly produced into 2 rather long erect horn-like appendages. Nut small, oblong.—Meissn. in Pl. Preiss. i. 527, ii. 251, and in DC. Prod. xiv. 314; Endl. Iconogr. t. 32; *Conospermum reticulatum*, Sm. in Rees' Cycl. ix.; *Synaphea Drummondii*, Meissn. in DC. Prod. xiv. 315.

**W. Australia.** King George's Sound and adjoining districts, Menzies, Baxter, Fraser, Oldfield, Drummond, n. 21, 2nd coll. n. 303, 3rd coll. n. 259, Preiss, n. 713, 776.

**3. *S. favosa*, R. Br. in Trans. Linn. Soc. x. 156, Prod. 369.** Stems short or decumbent, the whole plant glabrous or with a short silky

pubescence at the base of the petioles and rarely a few short hairs on the spike. Leaves on long petioles, a few of the outer ones entire but mostly divided nearly to the base into 3 entire or 2- or 3-lobed segments, the whole leaf 3 to 10 in. long, including the petiole. Flowering stems leafless, slightly branched, longer than the leaves, the flowers rather numerous, and at length distant. Bracts small. Perianth 2 to  $2\frac{1}{2}$  lines long. Stigma 2-horned but the horns not so long as in *S. dilatata*. Nut ovoid, contracted into a stipe nearly as long as itself.—Meissn. in Pl. Preiss. ii. 251, and in DC. Prod. xiv. 314.

**W. Australia.** King George's Sound, R. Brown, Baxter, Drummond, 3rd coll. n. 258; heaths north of Albany, F. Mueller. Drummond's 2nd coll. n. 302, referred by Meissner to *S. petiolaris*, and Preiss, n. 780, referred to *S. d. corticans*, have certainly, in the specimens examined, the 2-horned stigma of *S. favosa*.

*Var. divaricata*. Leaves shorter, twice or even three times divided into divaricata lobes. Flowering stems shorter and the flowers rather smaller than in the type, but in the specimens the inflorescence is not yet fully developed. The stigma is 2-horned as in the type.—Eyre's Relief, Maxwell, and specimens from King George's Sound, Fraser, are apparently the same, but not in flower.

**4. S. Preissii**, Meissn. in Pl. Preiss. i. 529, ii. 251, and in DC. Prod. xiv. 315. Stems short or decumbent, quite glabrous or the dilated base of the petioles very shortly silky-pubescent. Leaves all on long petioles, the lower ones sometimes entire but mostly with long divaricata lobes, the whole leaf sometimes 1 ft. long and the lobes 2 or 3 in., obtuse or acute. Flowering stems long and leafless, slightly branched, glabrous. Perianths usually about  $2\frac{1}{2}$  lines long, the segments rather narrow. Stigma produced anteriorly into an oblong truncate or emarginate appendage, at least as long as broad and incurved. Nut ovoid, about 2 lines long.

**W. Australia.** King George's Sound, Preiss, n. 770, Drummond, 3rd coll. n. 257, Harvey, Oldfield, Maxwell; Blackwood and Gordon rivers, Oldfield.

**5. S. acutiloba**, Meissn. in Pl. Preiss. i. 528, and in DC. Prod. xiv. 315. Stems short or decumbent, quite glabrous. Leaves all on long petioles, mostly once twice or thrice ternately divided into short divaricata undulating mostly pungent-pointed lobes, the whole lamina 2 to 3 in. long and broad or sometimes broader than long. Flowers small as in *S. petiolaris*, but not so much incurved. Stigma produced anteriorly into a short broad shortly 2-lobed appendage.

**W. Australia.** Swan river, Drummond, 1st coll. n. 580, Preiss, n. 777, 782. Perhaps a variety of *S. petiolaris*.

**6. S. petiolaris**, R. Br. in Trans. Linn. Soc. x. 156, Prod. 370. Stems short or decumbent, glabrous or slightly silky about the petioles and sometimes a few short hairs on the spikes. Leaves all on long petioles, mostly once or twice or even three times divided into spreading lobes, long and narrow when few, shorter when more divided, obtuse or with short points, the whole leaf including the petiole from a few in. to above 1 ft. long, the lowest leaves as in the allied species usually entire. Flowering stems long and leafless, usually branched, the flowers

small and distant. Perianth more incurved than in other species, not exceeding 2 lines. Stigma anteriorly produced on each side into a broad semicircular auricle or short broad lobe. Nut ovoid, about 2 lines long.—Meissn. in Pl. Preiss. i. 528, and in DC. Prod. xiv. 315.

**W. Australia.** King George's Sound and adjoining districts, *R. Brown, Baxter, A. Cunningham, Preiss, n. 781, Drummond, Oldfield, F. Mueller.*

**Var. *gracillima*.** Leaf-segments long and narrow. Flowers very small and more curved in slender spikes—*S. gracillima*, Lindl. Swan Riv. App. 32; Meissn. in DC. Prod. xiv. 315. —Swan river, *Drummond*, 1st coll. n. 588, and a still more slender elongated form, *Murchison* river, *Oldfield*.

**7. *S. decorticans*,** Lindl. *Swan Riv.* App. 32. Stems short or decumbent, hirsute as well as the petioles with spreading hairs as in *S. dilatata*, or rarely nearly glabrous. Leaves also as in that species cuneate, undulate, once or twice 3-lobed at the end, 3 to 4 in. long including the petioles. Flowering branches long and slender, perianths scarcely 2 lines long and stigma with short lateral rounded lobes as in *S. petiolaris*, without the horns of *S. dilatata*.—Meissn. in DC. Prod. xiv. 314, partly.

**W. Australia.** Swan river, *Drummond*, 1st coll.

**8. *S. pinnata*,** Lindl. *Swan Rio.* App. 32. Leafy stems in our specimens exceedingly short or scarcely any, the whole plant quite glabrous and somewhat glaucous or the spike slightly pubescent. Leaves radical, on long petioles, divided at the end into 3 digitate segments, or rarely pinnate with 5 segments, the lowest pair distant, the segments all contracted at the base, quite distinct, lanceolate, acute, 1½ to 3 in. long, entire or divided into 3 more or less decurrent or confluent segments, the first leaves sometimes undivided. Flowering stems leafless, slender, often above 1 ft. long, with a few long branches. Flowers not numerous, towards the end of the branches, a few of the lower ones distant. Bracts 1 to 2 lines long, broad, acute. Perianth nearly 3 lines long, the claws very oblique and at least as long as the laminae, and the upper lamina not so broad as in the other species. Stigma broad, concave, without lobes or appendages.—Meissn. in Pl. Preiss. i. 530, and in DC. Prod. xiv. 316.

**W. Australia.** Swan river, *Drummond*, 1st coll., Preiss, n. 783 (Meissner). I have only seen Drummond's specimens.

## 6. CONOSPERMUM, Sm.

Flowers hermaphrodite. Perianth-tube straight, entire; limb of 4 nearly equal spreading lobes or 2-lipped, the upper lip very broad, concave, shortly acuminate or with recurved margins, the lower with 3 narrow lobes. Stamens inserted in the gibbous apex of the tube or concave base of the limb; filaments short, thick; anther of the uppermost stamen with 2 perfect cells, of the lateral stamens with 1 perfect and 1 abortive cells, of the lowest stamen with 2 abortive cells, the





perfect cells stipitate erect concave, each one of the lateral anthers when in bud facing the adjoining one of the upper anther and forming with it but one cell, but separating as the flower opens, the abortive cells usually subulate. Ovary oboconical, crowned by a tuft of long hairs, 1-celled with 1 pendulous orthotropous ovule. Style filiform at the base, more or less thickened and curved on a level with the anthers and terminating in an oblong or narrow beak with a lateral stigma close to the end elastically turned down towards the lower lobe of the perianth as the limb expands. Fruit a small indehiscent turbinate or oboconical nut, the apex broad flat or concave, covered with a coma of usually long hairs, the sides villous with shorter hairs.—Shrubs or undershrubs. Leaves quite entire. Flowers blue lilac pink or white (not yellow), in short dense spikes, which are either sessile in dense compound heads, or solitary on axillary peduncles or variously paniculate on axillary or terminal peduncles, each flower sessile within a broad sheathing persistent bract, the rhachis of the spike often somewhat lengthened and thickened as the flowering advances.

The genus is limited to Australia, and the greater number of species to extratropical W. Australia. Among the Eastern species, the most common one extends to within the tropics. The anthers, style, ovary and fruit are remarkably uniform in the whole genus, and are therefore not mentioned in the following descriptions, although they have been examined in every species of which the specimens were sufficient.

SECT. 1. **Isomerum.**—*Perianth-lobes as long as or longer than the tube, nearly equal and spreading, the cavity in which the anthers are placed forming the summit of the tube and rather more gibbous on the upper side.*

- |  |                            |
|--|----------------------------|
| Spikes in a dense compound head, sessile at the base of very long leaves terminating a dwarf stem. Perianth villous.                                 | 1. <i>C. capitatum.</i>    |
| Leaves linear. Perianth-lobes about as long as the tube . . . . .  | 2. <i>C. petiolare.</i>    |
| Leaves linear-lanceolate. Perianth-lobes much longer than the tube . . . . .   | 3. <i>C. teretifolium.</i> |
| Spikes in leafless panicles. Leaves only at the base of the stem. Perianth glabrous.   | 4. <i>C. flexuosum.</i>    |
| Leaves terete, rush-like. Spikes in a compact corymbose panicle. Perianth $\frac{3}{4}$ in. long . . . . .   |                            |
| Leaves flat, linear or lanceolate. Spikes or heads in an intricately branched divaricate flexuous panicle. Perianth $\frac{1}{2}$ in. long . . . . . |                            |

SECT. 2. **Euconospermum.**—*Perianth-limb 2-lipped, as long as or shorter than the tube, the upper lip very broad, concave over the anthers, the lower with 3 narrow lobes.*

- |   |                        |
|---|------------------------|
| Flowers glabrous or pubescent, not woolly.  |                        |
| Stems leafy to the inflorescence. Spikes not corymbose.   |                        |
| Western species.  |                        |
| Peduncles all axillary, short and single-spiked.  |                        |
| Leaves 1 to 2 in. long, terete, rigid and pungent-pointed.  | 5. <i>C. acerosum.</i> |
| Perianth white, lobes as long as the tube . . . . .   |                        |
| Leaves under $\frac{3}{4}$ in. long, linear-terete, not pungent. Perianth blue, lobes short . . . . . | 6. <i>C. amoenum.</i>  |
| Peduncles terminal, or if in the upper axils leafy at the base, single-spiked and short.              |                        |
| Leaves flat, oblong . . . . .   | 7. <i>C. nervosum.</i> |
| Leaves linear-terete, grooved above . . . . .   | 8. <i>C. diffusum.</i> |

- Peduncles terminal and axillary, usually leafy at the base, slender, simple or branched. Bracts large and coloured, concealing the very small perianth . . . . . 9. *C. glumaceum*.
- Stems leafy at the base only, with long terminal simple or paniculate leafless peduncles. Western species (except *C. longifolium*).  
 Spikes several, sessile along the simple peduncle.  
 Leaves terete and rush-like . . . . . 10. *C. ephedroides*.  
 Spikes numerous and small, in a large leafless panicle.  
 Leaves almost filiform . . . . . 11. *C. polycephalum*.  
 Spikes not numerous, in a loose panicle. Stems decumbent.  
 Leaves oblong or oblanceolate . . . . . 12. *C. corruleum*.  
 Leaves narrow-lanceolate or linear . . . . . 13. *C. debile*.  
 Spikes single at the end of a long leafless peduncle.  
 Leaves oblanceolate, hirsute, with long spreading hairs . 14. *C. scaposum*.  
 Leaves narrow-linear or subulate, glabrous . . . . . 15. *C. Huegellii*.  
 Leaves crowded, filiform, hirsute with long spreading hairs 16. *C. densiflorum*.  
 Spikes several in a compact corymbose panicle at the end of the long leafless peduncle.  
 Leaves crowded, filiform, hirsute with long spreading hairs 16. *C. densiflorum*.  
 Leaves cuneate lanceolate or obovate-oblong, glabrous, under 2 in. long . . . . . 17. *C. Brownii*.  
 Leaves lanceolate oblong-lanceolate or linear, 3 to 6 in. long . . . . . 18. *C. longisolum*.  
 Stems leafy to the inflorescence. Peduncles several, terminal or in the upper axils, each with several spikes, forming a corymbose panicle. Eastern species.  
 Perianth-limb about as long as the tube.  
 Leaves very narrow, 3 to 6 in. long. Inflorescence loose 19. *C. tenuifolium*.  
 Leaves rigidly linear, crowded, erect, 2 to 3 in. long. Inflorescence compact . . . . . 20. *C. Mitchellii*.  
 Perianth-limb not above half as long as the tube.  
 Leaves rigidly linear, crowded, erect, 2 to 3 in. long . . . . . 21. *C. sphacelatum*.  
 Leaves crowded, under 1 in. long (except in one var. of *C. taxifolium*).  
 Leaves linear or linear-lanceolate, very spreading . . . . . 22. *C. patens*.  
 Leaves linear linear-oblong or lanceolate, erect or slightly spreading . . . . . 23. *C. taxifolium*.  
 Leaves very narrow-linear . . . . . 24. *C. ericifolium*.  
 Leaves elliptical or oblong-cuneate . . . . . 25. *C. ellipticum*.  
 Flowers very densely woolly-villous except the minute upper lip.  
 Leaves terete or semiterete.  
 Spikes simple in the upper axils. Leaves subulate, crowded.  
 Leaves 1½ to 3 in. long . . . . . 26. *C. distichum*.  
 Leaves under ¾ in. long, very spreading and incurved . . . . . 27. *C. floribundum*.  
 Spikes racemose or paniculate on a terminal peduncle.  
 Leaves slender, crowded, spreading, incurved, ½ to ¾ in. long . . . . . 28. *C. incurvum*.  
 Leaves slender, crowded, 1½ to 3 in. long . . . . . 29. *C. brachiphyllum*.  
 Leaves rigid, terete or semiterete and channelled, 3 to 6 in. long or more . . . . . 30. *C. staechadis*.  
 Leaves lanceolate, 3-nerved. Spikes paniculate . . . . . 31. *C. triplinervium*.  
 Flowering spikes very densely villous with long spreading silky hairs. Lobes of the perianth as long as the tube.  
 Leaves at the base of the stem petiolate, obovate, 3-nerved.  
 Stem-leaves short, ovate, stem-clasping. Spikes in the upper axils flexuous . . . . . 32. *C. bracteosum*.  
 Leaves at the base of the stem very long, with a prominent midrib. Scapes leafless, with a large dense corymbose panicle . . . . . 33. *C. crassinervium*.

SECT. 1. **Isomerum**, R. Br.—Perianth-lobes as long as or longer than the tube, all nearly equal, linear and spreading, the cavity in which the anthers are placed forming rather the summit of the tube than the base of the lobes, and rather more gibbous on the upper or posterior side.

R. Brown restricted the section *Isomerum* to the *C. flexuosum*, and united the three other species under *Chilurus*, characterized by the longer and more slender perianth-lobes. It appears to me, however, that *C. teretifolium* is much more removed in habit inflorescence and perianth from *C. capitatum* and *C. petiolare*, than from *C. flexuosum*, and that the four species make one well marked section which if broken up at all, must be divided into three.

1. **C. capitatum**, R. Br. in *Trans. Linn. Soc.* x. 155, *Prod.* 369. A dwarf shrub or undershrub, resembling at first sight *Isopogon attenuatus*. Stems very short and woody. Leaves crowded, linear, flexuose but rigid, 6 in. to 1 ft. long, with nerve-like margins, contracted into a slender petiole. Flowers sessile amongst the leaves, in dense terminal compound heads of  $\frac{1}{2}$  to 1 in. diameter, with numerous imbricate broadly lanceolate acute bracts, black when dry, the common rhachis thick and conical, the partial ones silky-pubescent, lengthening out to from  $\frac{1}{4}$  to  $\frac{1}{2}$  in. Perianth slightly pubescent, about 1 in. long, the tube contracted above the middle, nearly equally dilated at the top round the anthers or rather more gibbous on the upper side, slightly contracted over the anthers by the thickened base of the laminæ, which are all equal, linear-subulate and as long as the tube. Style much thickened on a level with the anthers.—Meissn. in *Pl. Preiss.* i. 526, ii. 251, and in *DC. Prod.* xiv. 324.

**W. Australia.** King George's Sound and adjoining districts, R. Brown, *Drummond*, 3rd coll. n. 251, *Preiss.* n. 759, 760, and others.

2. **C. petiolare**, R. Br. *Prot. Nov.* 11. A dwarf shrub or undershrub with the habit and inflorescence of *C. capitatum*. Stems woody, sometimes very short, sometimes proliferous and 6 to 8 in. high. Leaves linear-lanceolate or oblong-lanceolate, often hooked at the end, contracted into a long petiole, coriaceous, with more or less prominent nerve-like margins, 6 in. to 1 ft. long or a few of the outer ones short and broad. Flower-heads compound, terminal and sessile amongst the leaves, larger than in *C. capitatum*, but with similar imbricate bracts. Perianth villous, the tube  $\frac{1}{4}$  to  $\frac{1}{2}$  in. long, very gibbous at the top over the anthers especially on the upper side, the laminæ all equal, almost filiform, about 1 in. long.—Meissn. in *Pl. Preiss.* i. 525, ii. 250, and in *DC. Prod.* xiv. 524.

**W. Australia.** King George's Sound, Baxter, *Drummond*, 3rd coll. n. 250, *Preiss.* n. 757, F. Mueller.

3. **C. teretifolium**, R. Br. in *Trans. Linn. Soc.* x. 155, *Prod.* 369. A glabrous erect undershrub, attaining 2 ft. or rather more. Leaves in the lower part of the stem terete, rigid, rush-like, often 6 in. to 1 ft. long. Upper part of the plant leafless forming a terminal corymbose panicle, with numerous flowers in short spikes at the ends of the

branches, the leaves all reduced to small scales. Bracts broadly sheathing, truncate, about  $1\frac{1}{2}$  lines long. Perianth glabrous, the tube about 4 lines long, slightly gibbous at the top on the upper side; laminae narrow-linear, 6 to 7 lines long, all equal and slightly thickened inside along the centre.—Meissn. in Pl. Preiss. i. 525, and in DC. Prod. xiv. 324; Endl. Iconogr. t. 46.

**W. Australia.** King George's Sound, R. Brown, A. Cunningham, Drummond, 2nd coll. n. 311, Preiss, n. 785, and many others; E. Mount Barren, Maxwell.

**4. C. flexuosum**, R. Br. Prot. Nov. 11. An undershrub attaining 3 or 4 ft. (*Oldfield*), the greater part occupied by a broad leafless panicle, with numerous intricately divaricate very flexuous prominently angled branches. Leaves radical or at the base of the stem, long-lanceolate, obtuse or with a callous point, narrowed into a long petiole, rather rigid, with prominent margins, 6 in. to nearly 1 ft. long including the petiole. Flowers small, whitish, quite glabrous, in little spikes or heads of 2 to 6 at the ends of the branchlets. Bracts sheathing, obtuse, nearly as long as the perianth-tube. Perianth-tube about 1 line long, gibbous over the anthers on the upper side; laminae all equal, spreading, narrow-oblong,  $1\frac{1}{2}$  to 2 lines long, thickened inside along the centre.—Meissn. in Pl. Preiss. i. 526, ii. 251, and in DC. Prod. xiv. 324.

**W. Australia.** King George's Sound and adjoining districts, Baxter, Drummond, 2nd coll. n. 309, 310, 5th coll. n. 402, Preiss, n. 753, *Oldfield*, F. Mueller; Cape Naturaliste and Vasse river, *Oldfield*.

Sect. 2. EUCONOSPERMUM.—Perianth-limb 2-lipped, as long as or shorter than the tube, the upper lip very broad, concave over the anthers, the end and margins more or less flat and erect or recurved, lower lip more or less deeply divided into 3 narrow lobes, often thickened along the centre.

**5. C. acerosum**, Lindl. Swan Riv. App. 30. An erect rigid glabrous shrub, attaining 3 or 4 ft. Leaves terete, rigid, acute and often pungent-pointed, mostly 1 to 2 in. long. Flowers in axillary pedunculate spikes much shorter than the leaves, or the upper spikes crowded, longer, and on longer peduncles so as almost to conceal the shorter leaves. Bracts broad, sheathing, half as long as the perianth-tube. Perianth glabrous, about 4 lines long, the lobes about as long as the tube, the upper one broad and gibbous at the base over the anthers, the lower ones shortly united in a lower lip.—Meissn. in Pl. Preiss. i. 522, and in DC. Prod. xiv. 318.

**W. Australia.** Swan river, Drummond, 1st coll., Preiss, n. 786; between Moore and Murchison rivers, Drummond, 6th coll. n. 174; Murray and Murchison rivers, *Oldfield*.

**6. C. amœnum**, Meissn. in Pl. Preiss. i. 522, and in DC. Prod. xiv. 318. An erect or spreading shrub of 1 or 2 ft., the branches and inflorescence usually hoary-pubescent, the foliage glabrous. Leaves

numerous, linear-terete, mostly acute but not pungent,  $\frac{1}{4}$  to  $\frac{1}{2}$  in. or rarely  $\frac{3}{4}$  in. long. Flowers in axillary spikes, usually few in the spike but the spikes crowded in the upper part of the branches and often exceeding the leaves, the rhachis and bracts minutely or densely pubescent. Bracts broad, sheathing, coloured, more than half as long as the perianth-tube. Perianth 3 to  $3\frac{1}{2}$  lines long, retaining the blue colour when dry, nearly glabrous or hoary-tomentose but never woolly as in *C. distichum* and its allies, the concave upper lip as broad as the three lobes of the lower lip.—*C. caeruleocephala*, F. Muell. Fragm. i. 157.

**W. Australia.** King George's Sound, Miln; Kalgan river and Cooginup, Oldfield; Swan river, Drummond, 1st coll. n. 583, Preiss, n. 745; Salt river and Cape Knob, Maxwell.

7. **C. nervosum**, Meissn. in Hook. Kew Journ. vii. 71, and in DC. Prod. xiv. 321. Stems leafy, simple at the base, paniculately branched in the upper part and minutely hoary-tomentose. Leaves oblong, obtuse or with a small recurved point, the lower ones several in. long and contracted into a rather long petiole, the others nearly sessile and mostly under 1 in. long, all rigid, veined and with an intramarginal nerve conspicuous on the under side. Spikes short, nearly globular, shortly pedunculate in the upper axils and shorter than or scarcely exceeding the leaves. Bracts broad, acuminate, shorter than the perianth-tube, shortly ciliate and sparingly pubescent as well as the rhachis. Perianth about  $3\frac{1}{2}$  lines long, the tube slightly pubescent, the limb as long as the tube, the upper segment or lip concave with recurved margins, the lower about as long and shortly 3-lobed.

**W. Australia.** Between Moore and Murchison rivers, Drummond, 6th coll. n. 175. The two varieties mentioned in the Prodromus may both be found on one specimen.

8. **C. diffusum**, Benth. A much-branched spreading or diffuse shrub, glabrous or the branches minutely hoary-tomentose. Leaves linear, terete, grooved above, obtuse or with a small recurved point, mostly about 1 in. long. Spikes nearly globular, shortly pedunculate in the upper axils or terminating short axillary branches and shorter than the leaves. Bracts glabrous or minutely ciliate, very broadly sheathing, shortly acuminate. Perianth blue, about 3 lines long, glabrous, the limb as long as the tube, the upper segment or lip concave with recurved margins and the lower lip very shortly 3-lobed, as in *C. nervosum*.

**W. Australia**, Drummond.

9. **C. glumaceum**, Lindl. Swan Riv. App. 30. A shrub or undershrub of 3 or 4 ft., quite glabrous. Leaves crowded, linear or linear-lanceolate, acute or with a callous point, with nerve-like margins,  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. long. Peduncles very numerous terminating short axillary branchlets, slender, simple or branched, 4 in. to above 1 ft. long, forming a large leafy panicle. Spikes terminating the peduncles or branches, remarkable for the thin coloured broadly lanceolate acute bracts, 3 to 5

lines long, and concealing the small flowers. Rhachis slightly hirsute. Perianth glabrous, about  $1\frac{1}{2}$  lines long, on a very short pedicel adnate to the base of the bract, the tube obliquely obovate, the upper lip very broad and concave, much shorter than the tube, the lower lip as long as the tube, deeply and narrowly 3-lobed. Coma of the nut short.—Meissn. in Pl. Preiss. ii. 249, and in DC. Prod. xiv. 323; *C. lupulinum*, Endl. Gen. Pl. Suppl. iv. 80; Meissn. in Pl. Preiss. ii. 249.

**W. Australia.** Swan river, *Drummond*, 1st coll. n. 585, *Preiss*, n. 855.

**10. *C. ephedroides***, Kipp.; Meissn. in Hook. Kew Journ. vii. 70, and in DC. Prod. xiv. 323. An undershrub with erect rushlike stems of 1 to 2 ft., slightly branched and minutely hoary-silky. Leaves in the lower part only, terete, rush-like, rather thick, 2 to 6 in. long, the upper ones all reduced to small scales. Flowers small, in short spikes sessile and distant along the upper part of the stems. Bracts broadly ovate, acuminate, hirsute at the base, as long as the perianth-tube. Perianth-tube hirsute, cylindrical, a little above 1 line long, the limb glabrous, 2 lines long, the upper lip very broad, concave, obtuse, the lower of 3 narrow convex lobes.

**W. Australia.** Between Swan river and King George's Sound, *Gillert*, *Drummond*, n. 25.

**11. *C. polycephalum***, Meissn. in Pl. Preiss. ii. 249, and in DC. Prod. xiv. 323. An undershrub or shrub of 2 to 3 ft., glabrous except the spikes. Leaves in the lower part of the stem or branches terete, almost filiform, 3 to 6 in. long, or here and there still longer. Spikes numerous, almost globular, in a long leafless much-branched panicle often exceeding 1 ft. Bracts broad, truncate with a small point, shorter than the perianth-tube, more or less pubescent or hirsute in the typical form as well as the rhachis of the spike. Perianth blue, about 3 lines long or rather more, the tube minutely and sparingly pubescent, the limb glabrous, the upper lip broad and concave, about as long as the tube, the lower lip with narrow lobes scarcely exceeding the upper lip.

**W. Australia.** *Drummond*, 2nd coll. n. 305. Some specimens in young bud from Darling range and Canning river, *Oldfield*, may also possibly belong to the same species.

Var. *leianthum*. Spikes quite glabrous.—*Stokes Inlet and Esperance Bay, Maxwell*.

**12. *C. cæruleum***, R. Br. in Trans. Linn. Soc. x. 154, Prod. 369. An undershrub with a thick woody base and decumbent or ascending flowering stems of 1 to  $1\frac{1}{2}$  ft. Leaves at the base of the stems oblong or oblong-lanceolate, 2 to 6 in. long and contracted into a petiole at least as long in the typical form, slightly veined, with an intramarginal or almost marginal nerve conspicuous underneath; there are also sometimes a few smaller narrower leaves below the middle of the stem, the greater part of which is a long narrow leafless panicle with few branches, each bearing a short ovoid or oblong spike of deep blue flowers, the rhachis and bracts white with a silky wool. Bracts broad, with a glabrous point as long as or rather longer than the perianth-tube. Peri-

anth 3 to 4 lines long, the tube slightly hirsute, the lips nearly glabrous, longer than the tube. Apex of the nut very broad and concave.—Meissn. in Pl. Preiss. i. 520, and in DC. Prod. xiv. 322.

**W. Australia.** King George's Sound, R. Brown, A. Cunningham, Preiss, n. 734, Drummond, Oldfield, F. Mueller.

Var. *marginatum*. Leaves much smaller and more numerous, the lower ones 2 to 3 in. long including the long petiole. Spikes few, much less woolly or nearly glabrous.—*C. marginatum*, Meissn. in Pl. Preiss. ii. 248, and in DC. Prod. xiv. 323.—W. Australia, Drummond, 2nd coll. n. 306; Vasse river, Oldfield.

Var. *spathulatum*. Leaves still more numerous and smaller, oblong-spathulate, mostly under 1 in. including the short petiole. Spikes woolly as in the typical form.—Between King George's Sound and Swan river, Harvey.

13. **C. debile**, Kipp.; Meissn. in Hook. Kew Journ. vii. 70, and in DC. Prod. xiv. 322. Stems slender, decumbent or procumbent, 1 ft. long or more, glabrous as well as the foliage. Lower leaves on long petioles, linear or linear-lanceolate, those along the stems not numerous, narrow-linear and sessile, 1 to 2 in. long. Panicle terminal, loose, but slightly branched, with short spikes and flowers similar to those of *C. cæruleum* or rather smaller.

**W. Australia.** Gilbert, n. 164, Drummond. Possibly an extreme form of *C. cæruleum*.

14. **C. scaposum**, Benth. Apparently herbaceous, the petioles and lower part of the stems hirsute with long fine spreading hairs, the older leaves nearly glabrous. Leaves radical or at the base of the stems,  $\frac{1}{2}$  to  $1\frac{1}{2}$  in. long and contracted into a petiole about as long, lanceolate, with a callous point and thickened nerve-like margins. Scapes or flowering stems simple or slightly branched,  $\frac{1}{2}$  to  $1\frac{1}{2}$  ft. high, with a single small nearly globular hirsute spike terminating each branch. Bracts broad, acuminate, ciliate, longer than the perianth-tube. Perianth hirsute with rather long hairs, about  $2\frac{1}{2}$  lines long, the limb rather longer than the tube, the upper lip broad and concave, the lower with three narrow lobes.

**W. Australia.** Between Swan river and King George's Sound, Drummond.

15. **C. Huegelii**, R. Br. in Endl. Nov. Stirp. Dec. 58. An undershrub with the leafy part of the stem very short, glabrous except the spike. Leaves crowded, narrow-linear, from almost subulate and 1 to 2 in. long to 6 or 8 in. long and 1 line broad. Peduncles erect, simple, leafless, often above 1 ft. long, bearing a single terminal ovoid or oblong spike of blue flowers. Bracts ovate, acuminate, villous at the base as well as the rhachis. Perianth glabrous, about  $3\frac{1}{2}$  lines long, the limb 2-lipped, shorter than the tube.—Meissn. in Pl. Preiss. i. 521, and in DC. Prod. xiv. 323.

**W. Australia.** Swan river, Huegel, Drummond, 1st coll. n. 584, Preiss, n. 735.

16. **C. densiflorum**, Lindl. Swan Riv. App. 32. An undershrub, woody branched and leafy at the base, the stems and foliage hirsute with long fine spreading hairs. Leaves densely crowded in the lower

part of the stem, filiform, 1 to 2 in. long. Peduncles leafless, erect, above 1 ft. long, simple with a single terminal spike or bearing a compact terminal corymb of 3 or 4 spikes, all short dense globular or ovoid and hirsute. Bracts acuminate, hirsute with long hairs. Perianth about 5 lines long, the tube shortly and sparingly hirsute, the limb glabrous, shorter than the tube, the very broad concave upper lip shorter than the narrow lobes of the lower lip.—Meissn. in Pl. Preiss. i. 521, and in DC. Prod. xiv. 324.

**W. Australia.** Swan river, Drummond, 1st coll. n. 582, Preiss, n. 2301, b. (I have only seen Drummond's specimens.)

17. **C. Brownii**, Meissn. in Pl. Preiss. ii. 248, and in DC. Prod. xiv. 324. Flowering stems apparently simple, leafy in the lower part, glabrous and glaucous as well as the foliage. Leaves lanceolate cuneate or obovate-oblong, almost acute, 1½ to 2 in. long, contracted into a short petiole dilated at the base, rigid, 3-nerved. Peduncle terminal, 6 in. to 1 ft. long, leafless and simple except at the top, where it bears a short compact corymbose panicle of numerous small spikes quite glabrous. Bracts short, broad, obtuse, of a deep blue, the upper ones imbricate. Perianth glabrous, the tube fully 4 lines long, the upper lip broad, concave, about 1 line long, the lower one rather longer and 3-lobed.

**W. Australia**, Drummond, 2nd coll. n. 304.

18. **C. longifolium**, Sm. Exot. Bot. ii. 45, t. 82. A shrub or undershrub, glabrous except the inflorescence or the branches tomentose. Leaves in the typical form lanceolate or oblong-lanceolate, acute, 3 to 6 in. long and narrowed into a long petiole, veined and with nerve-like margins. Peduncles terminal or terminating short branchlets in the upper axils, often 1 ft. long, branched towards the end into a compact corymbose panicle. Spikes at first short and capitate but lengthening to 1 in. or more, the rachis silky-tomentose. Bracts short, acuminate. Perianth usually pubescent, about 4 lines long, the tube at least twice as long as the limb, the upper lip short broad and concave, the lower somewhat longer with rather broad lobes.—R. Br. in Trans. Linn. Soc. x. 154, Prod. 369; Meissn. in DC. Prod. xiv. 321; *C. Smithii*, Pers. Syn. i. 116.

**N. S. Wales.** Port Jackson, R. Brown, Sieber, n. 41, and others.

Var. *angustifolium*, R. Br. Prot. Nov. 10. Leaves all narrow-linear, the peduncles not usually so long as in the typical form, but the two forms, though at first sight very distinct, are connected by numerous intermediates.—*C. tenuifolium*, Sieb. Pl. Exs. not of R. Br.; *C. commutatum*, Reem. and Schult. Syst. iii. Mant. 275.—Port Jackson, R. Brown, Sieber, n. 40, and others.

*C. acinacifolium*, Grah. in Edinb. Philos. Journ. 1826, 171, Meissn. in DC. Prod. xiv. 320, raised from Fraser's seeds, would appear from the detailed description given, to be the same narrow-leaved variety of *C. longifolium*.

19. **C. tenuifolium**, R. Br. in Trans. Linn. Soc. x. 154, Prod. 369. Stems from a woody base procumbent ascending or erect, often above 1 ft. long, usually glabrous. Leaves numerous, very narrow linear or

almost terete, grooved above, mostly with an incurved point, 3 to 6 in. long or sometimes much longer. Peduncles terminal and in the upper axils, slender, almost filiform, mostly about 6 in. long, bearing each about 2 to 6 shortly pedunculate spikes of small flowers, forming a terminal corymb. Bracts broad, shortly acuminate, nearly as long as the perianth-tube. Perianth "lilac," pubescent, about 2 lines long, the limb as long as the tube or rather longer, the lips nearly equal, obtuse, the upper one concave, the lower one shortly 3-lobed.—Meissn. in DC. Prod. xiv. 321; *C. repens*, Sieb. in Roem. and Schult. Syst. iii. Mant. 276.

**N. S. Wales.** Port Jackson to the Blue Mountains, *R. Brown*, *Sieber*, n. 45 *A. Cunningham*, and others; Illawarra, *A. Cunningham*, *Shepherd*.

Meissner describes the perianth lobes as twice as short as the tube; this can only apply to the lobes of the lower lip, the lips themselves are usually rather longer than the tube.

20. **C. Mitchellii**, *Meissn.* in *DC. Prod.* xiv. 320. An erect shrub, with the crowded erect linear rigid leaves general habit and compact terminal corymbs of *C. sphacelatum*, of which F. Mueller considers it as a variety, but the perianths are more densely and softly pubescent, only 3 lines long and the lips as long as the tube, differences which are quite constant in all the specimens I have seen.—*C. Dallachyi*, F. Muell. Ann. Rep. 1858 (name only).

**Victoria.** Grampians, *Mitchell*, *F. Mueller*; Wimmera and Lutitt Bay, *Dallachy*; Glenelg River, *Robertson*, *Allitt*.

21. **C. sphacelatum**, *Hook.* in *Mitch. Trop. Austr.* 342. An erect shrub, the branches and young leaves silky or hoary-tomentose, the older foliage glabrous, the inflorescence pubescent. Leaves crowded, erect, linear, rigid, with a small callous point, obscurely 1-nerved, mostly 2 to 3 in. long. Peduncles in the upper axils longer than the leaves, bearing each several spikes, and forming a compact broad terminal corymb. Bracts broad, shortly acuminate. Perianth shortly pubescent, about 5 lines long, the limb about half as long as the tube, the lips nearly equal, the upper one broad, concave, shortly acuminate, the lower one divided below the middle into 3 narrow lobes.—Meissn. in DC. Prod. xiv. 320.

**Queensland.** Near Mount Pluto, *Mitchell*.

22. **C. patens**, *Schlecht.* in *Linnæa*, xx. 587. An erect shrub, minutely hoary-tomentose or the foliage at length glabrous. Leaves numerous, spreading, linear or linear-lanceolate, acute, contracted below the middle, mostly  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long. Peduncles several in the upper axils, 3 to 5 in. long, bearing each a small corymb of pedunculate spikes. Bracts broad, acuminate, rarely as long as the perianth-tube. Perianth hoary-pubescent, about  $2\frac{1}{2}$  lines long, the limb about half as long as the tube, the upper lip very broad, the lower rather longer, divided to the middle into 3 narrow lobes.—Meissn. in DC. Prod. xiv. 320; F. Muell. Pl. Viet. ii. t. 70.

**N. S. Wales?** Twofold Bay, F. Mueller (specimens almost passing in to *C. taxifolium*, from which *C. patens* differs chiefly in its loose habit and spreading leaves).

**Victoria.** Grampians, F. Mueller; Wimmera, Dallachy; N.W. districts, L. Morton; Glenelg river, Robertson.

**S. Australia.** Bethanie, St. Vincent's Gulf, Behr, F. Mueller, and others; Kangaroo Island, Waterhouse.

**23. *C. taxifolium*, Sm. in Rees' Cyc. ix.** An erect shrub of several ft., with virgate branches, minutely hoary-tomentose or glabrous, the inflorescence usually pubescent. Leaves crowded, linear or lanceolate, acute, rigid, erect or slightly spreading, contracted at the base, mostly  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long, but in a few specimens nearly 1 in. and the lower ones even still longer. Peduncles in the upper axils usually rather numerous, 1 to 3 in. long, rarely longer, each bearing several pedunculate spikes, the whole forming a more or less corymbose panicle. Bracts broad, acuminate, shorter than the perianth-tube. Perianth pubescent, 2½ to 3 lines long, the limb much shorter than the tube, the upper lip broad and concave, the lower rather longer, divided to the middle into narrow lobes.—R. Br. in Trans. Linn. Soc. x. 154, Prod. 368; Meissn. in DC. Prod. xiv. 319; Hook. f. Pl. Tasm. i. 319; Bot. Mag. t. 2724; *C. falcifolium*, Knight, Prot. 95 (R. Br.); *C. affine*, Roem. und Schult. Syst. iii. Mant. 274; *C. spicatum*, R. Br. Prot. Nov. 10; Meissn. in DC. l.c.; *C. propinquum*, R. Br. l.c.; Meissn. l.c.; *C. larundulifolium*, A. Cunn.; Meissn. in Pl. Preiss. i. 519, and in DC. l.c.

**Queensland.** Moreton island, M'Gillivray, F. Mueller; Estuary of the Bardekin, Herb. F. Mueller.

**N. S. Wales.** Port Jackson to the Blue Mountains, R. Brown, Sieber, n. 42 and Fl. Mist. n. 471; New England, C. Stuart; southward to Illawarra, A. Cunningham.

**Tasmania.** Spring Bay, East coast, Backhouse, Gunn.

Var. *lanceolata*. Leaves mostly under  $\frac{1}{2}$  in. long.—*C. lanceolatum*, R. Br. Prot. Nov. 10; Meissn. in DC. Prod. xiv. 320.—Hunter's river, R. Brown, Backhouse, Beckler; Hastings river, Beckler; Richmond river, Henderson.

Var. *linifolium*. Leaves more spreading and inflorescence looser, forming almost a passage into *C. patens*. *C. linifolium*, A. Cunn.; Meissn. in Pl. Preiss. i. 518, and in DC. Prod. xiv. 320. Peel's Island and Red Cliff Point, Moreton Bay, A. Cunningham.

Var.? *leptanthum*. Leaves narrow. Bracts and perianths perfectly glabrous and rather smaller than in the typical form.—Tasmania, Story.

**24. *C. ericifolium*, Sm. in Rees' Cyc. ix.** An erect shrub of several ft., minutely hoary-tomentose or nearly glabrous, closely allied to *C. taxifolium*, with similar virgate branches, crowded erect short leaves, corymbose inflorescence and the same flowers, and only differing in its much narrower leaves, mostly  $\frac{1}{4}$  to  $\frac{1}{2}$  in. long, rarely  $\frac{3}{4}$  in. or rather more, and about  $\frac{1}{2}$  line broad or sometimes quite filiform.—R. Br. in Trans. Linn. Soc. x. 154, Prod. 368; Rudge in Trans. Linn. Soc. x. 292, t. 17; Meissn. in DC. Prod. xiv. 319; Bot. Mag. t. 2850; Endl. Iconogr. t. 31; *C. erectum*, Grah. Edinb. Phil. Journ. 1828, 171 (Meissn.).

**N. S. Wales.** Port Jackson, R. Brown, Sieber, n. 43, and many others.

**25. *C. ellipticum*, Sm. in Rees' Cyc. ix.** A shrub with the virgate branches and erect leaves of *C. taxifolium*, but the branches softly villous

and the leaves much broader, varying however from broadly lanceolate to oval-elliptical or oblong-cuneate, obtuse or acute, from under  $\frac{1}{2}$  in. to nearly  $\frac{4}{5}$  in. long. Inflorescence corymbose as in *C. taxifolium*, but the peduncles shorter, more villous and the spikes fewer. Perianth villous,  $2\frac{1}{2}$  to 3 lines long, the tube but little longer than the lips.—R. Br. in Trans. Linn. Soc. x. 153; Prod. 368; Meissn. in DC. Prod. xiv. 322; *C. rigidum*, Knight, Prot. 95.

**N. S. Wales.** Port Jackson, *R. Brown*, and others.

Var. *imbricatum*. Leaves more closely imbricate and shorter, mostly about  $\frac{1}{2}$  in. long.—*C. imbricatum*, Sieb. in Spreng. Syst. Cnr. Post. 46, R. Br. Prot. Nov. 9; Meissn. in DC. Prod. xiv. 322. Port Jackson or Blue Mountains, Sieber, n. 41; Illawarra, A. Cunningham.

26. **C. distichum**, *R. Br.* in *Trans. Linn. Soc.* x. 155, *Prod.* 369, *not of Meissn.* A tall erect bushy shrub, glabrous except the inflorescence or the young shoots minutely tomentose. Leaves rather crowded, linear-terete, slender, sometimes filiform,  $1\frac{1}{2}$  to 3 in. long, the floral ones shorter. Spikes shortly pedunculate in the upper axils, 1 to 2 in. long, the rhachis tomentose, the flowers at length distant, very densely silky-woolly. Bracts very small, ovate, the margins woolly-ciliate, the surface glabrous. Perianth about 4 lines long, the very short broad concave upper lip nearly glabrous, but only very shortly protruding from the dense wool which covers the remainder of the perianth including the 3-lobed lower lip.—*C. procerrum*, F. Muell. Fragm. i. 157.

**W. Australia.** King George's Sound or more probably to the eastward? *Baxter*; Swan river? *Drummond*, 1st coll. n. 585; Cape Arid, *Maxwell*.

27. **C. floribundum**, Benth. A shrub of 2 or 3 ft., closely allied to *C. distichum*, but bearing the same relation to it that *C. incurvum* does to *C. brachyphyllum*. It is usually more bushy and the foliage often assumes a somewhat silvery aspect. Leaves crowded, very narrow linear, almost terete, very spreading and incurved, of a nearly uniform length, rather under  $\frac{1}{2}$  in. in some specimens and always under  $\frac{3}{4}$  in. Spikes in the upper axils 1 to 2 in. long, simple as in *C. distichum*, but owing to the number of flowering branches forming a broad compact corymbose panicle. Bracts glabrous, dark-coloured and very conspicuous on the very young spikes, but the larger lower ones very deciduous, and the upper ones which alone remain when the inflorescence is fully developed are all very small. Flowers usually but not always smaller than in *C. distichum*, similarly clothed with a dense silky wool. Perianth as in that species 4 lines long with a very small nearly glabrous upper lip.—*C. distichum*, Meissn. in Pl. Preiss. i. 522, and in DC. Prod. xiv. 318, not of R. Br.

**W. Australia.** Swan river, *Drummond*, 1st coll. n. 580, Preiss, n. 740; Stirling Range, *F. Mueller*.

28. **C. incurvum**, Lindl. *Swan Riv. App.* 30. An erect branching shrub, the stems minutely pubescent, the foliage glabrous. Leaves crowded, very narrow linear, almost terete, spreading and incurved,  $\frac{1}{2}$  to 1 in. long. Peduncles terminal, 6 to 10 in. long including the in-

florescence, bearing at the base a few small closely appressed erect and subulate leaves or bracts, the remainder a long narrow dense raceme-like panicle. Spikes numerous along the rachis, nearly sessile,  $\frac{1}{2}$  to 1 in. long, very densely silky-woolly. Bracts small and deciduous. Perianth about 3 lines long. The tube slender, the lips very short, the upper one pubescent only and very shortly protruding from the dense silky wool which covers the rest of the perianth.—Meissn. in Pl. Preiss. i. 523, ii. 250, and in DC. Prod. xiv. 318.

**W. Australia.** Swan river, Drummond, 1st coll. n. 579; Perongerup, Mrs. Knight (a very imperfect and therefore doubtful specimen).

29. **C. brachyphyllum**, Lindl. *Swan Riv. App.* 31. Very near *C. incurvum* and probably only a long-leaved variety, the young shoots sometimes softly hirsute, the adult foliage glabrous. Leaves more crowded than in *C. incurvum*, filiform, 1 to 3 in. long, the raceme-like panicles sometimes flowering from the base, sometimes supported on a long peduncle. Perianths densely woolly like those of *C. incurvum* but rather longer, mostly about 4 lines long and the small glabrous upper lip rather more conspicuous.—Meissn. in Pl. Preiss. i. 524, and in DC. Prod. xiv. 318; *C. Jilifolium*, Meissn. in Pl. Preiss. i. 523, and in DC. l.c.

**W. Australia.** Swan river, Drummond, 1st coll. n. 578, Preiss, n. 2624. The specific name is unfortunately chosen, as the leaves are longer than those of its nearest allied species, although much shorter than in *C. stoechadis*. Meissner's name is better, but of more recent date.

Var. *larifolium*. Leaves more crowded at the base of the stem, the panicle with its long peduncle often above 1 ft. long, and the spikes more developed. Perianths at least 5 lines long—Swan river, Drummond. This is the form which Meissner considers as the typical *C. brachyphyllum*.

Var. ? *rigidum*. Leaves very narrow-linear, but rigid, crowded, erect and  $1\frac{1}{2}$  to 3 in. long. Panicle very long and somewhat branched, the spikes short and dense along the branches, as on the rachis of the typical form.—W. Australia, Drummond, n. 35.

30. **C. stoechadis**, Endl. in *Ann. Wien. Mus.* ii. 208, and *Nov. Stirp. Dec.* 60. An erect rigid shrub of 3 or 4 ft., the young shoots silky-tomentose, the adult foliage glabrous. Leaves terete, rigid, 3 to 6 in. long or in a few specimens still longer, rather slender and scarcely channelled above in the typical form. Peduncles in the upper axils usually branched, 6 to 8 in. long, densely velvety-villous, the spikes few long and interrupted. Bracts short, broad, acuminate, tomentose. Perianth 3 to 4 lines long, densely woolly-hirsute, except the very small upper lip, which is pubescent only or almost glabrous.—Meissn. in Pl. Preiss. i. 524; *C. sclerophyllum*, Lindl. *Swan Riv. App.* 30; Meissn. in DC. Prod. xiv. 317.

**W. Australia.** Swan river, Drummond, 1st. coll. n. 581; Preiss, n. 736, 741, 744.

Var. *canaliculata*. Leaves longer, rather broader (but still very narrow-linear), more evidently channelled above or concave. Panicle on a longer peduncle, and the flowers rather larger.—*C. canaliculatum*, Meissn. in Pl. Preiss. ii. 259, and in DC. Prod. xiv. 317.—W. Australia, Drummond, 2nd coll. n. 307. Some specimens of Preiss's n. 742, appear also to belong rather to this variety than to the typical form.

31. **C. triplinervium**, R. Br. *Prot.* Nov. 11. A shrub of 2 to 3 ft., the branches erect, glabrous or minutely silky when young. Leaves in the typical form lanceolate, rather broad, acute or with a callous point, 3-nerved, contracted into a short or rather long petiole, glabrous or silvery-silky, 1½ to 3 in. long, but varying from that to almost linear and 3 or 4 in. long. Peduncles terminal or in the upper axils, from under 6 in. to nearly 1 ft. long, more or less tomentose, simple or branched, bearing several interrupted spikes of 1 to 3 in. Bracts small, acuminate. Perianth 2 to 3 lines long, densely woolly except the very small broad upper lip, which is pubescent only or nearly glabrous.—Meissn. in Pl. Preiss. i. 519, and in DC. *Prod.* xiv. 316; *C. laniflorum*, Endl. in Ann. Wien. Mus. ii. 208, and Nov. Stirp. Dec. 59; *C. undulatum*, Lindl. Swan Riv. App. 31; Meissn. in Pl. Preiss. i. 520, and in DC. *Prod.* xiv. 317.

**W. Australia.** King George's Sound, Baxter, and thence to Swan river, Drummond, 1st coll. n. 577; Preiss, n. 738, 739; Kalgan river, Oldfield; Salt and Fitzgerald rivers, Maxwell. The undulation of the leaves in the specimens distinguished under the name of *C. undulatum*, appears to me to be accidental only, and I can discover no other character.

Var. *minus*, Meissn. Leaves 1 to 2 in. long, very shortly petiolate and silvery-silky.  
—**W. Australia, Drummond, 5th coll. n. 401.**

32. **C. bracteosum**, Meissn. in Pl. Preiss. i. 518, ii. 248, and in DC. *Prod.* xiv. 317. Stems hard, simple or slightly branched, 1 to 1½ ft. high, more or less silky-villous, the young leaves also silvery but becoming glabrous when old. Radical leaves and a few at the base of the stem petiolate, obovate orbicular or spatulate, very obtuse, 3-nerved, ½ to 1 in. long, contracted into a petiole at least as long; stem-leaves bract-like, sessile, stem-clasping and closely appressed, ovate, shortly acuminate or obtuse, about ½ in. long. Spikes from the upper axils 2 to 3 in. long, densely silvery-villous, the rachis very flexuous, the flowers distant and very spreading. Bracts ovate, acute, shorter than the perianth, silvery and ciliate. Perianth recurved, about 3 lines long, the lips more than half as long as the tube, both of them as well as the tube very densely clothed with long spreading silvery hairs.

**W. Australia.** Drummond, 3rd coll. n. 252; east from Salt river, Maxwell; also Preiss, n. 746 (Meissn.), whose specimen I have not seen.

33. **C. crassinervium**, Meissn. in DC. *Prod.* xiv. 317. Stems forming a short woody base or stock, covered with the imbricate almost distichous remains of old leaves. Leaves radical or at the ends of the short branches of the stock, linear or linear-lanceolate, 6 in. to above 1 ft. long, acute, silvery-pubescent or villous, the margins thick and nerve-like, the midrib very prominent underneath, with a few transverse raised veins when the leaf is broad enough, or the midrib and margins occupying the whole under surface when narrow, contracted into a long petiole dilated and imbricate at the base as in *Synaphea*. Scapes 1 to 2 ft. high, leafless except small ovate acute spreading scales under the branches, bearing at the end a compact corymbose panicle about 6 in.

diameter, very densely villous with spreading silky hairs. Spikes short and dense terminating the very numerous branches. Bracts under the flowers obovate or cuneate, acute, often 2 lines long besides a long plumose point, the whole bract densely silky-villous outside, glabrous inside. Perianths almost concealed by the bracts, villous with long silky hairs only on the lobes, the lips as long as the tube, the upper one broad and concave, the lower one divided to the base into 3 narrow lobes. Coma of the nut very short.

**W. Australia.**, *Drummond*, 4th coll. n. 270; near the Murra-murra, *Oldfield*.

**TRIBE 3. FRANKLANDIEÆ.**—Anthers all perfect with adnate parallel cells, enclosed in and adnate to the slender perianth-tube. Ovule 1. Fruit a dry nut with a pappus-like coma.

### 7. FRANKLANDIA, R. Br.

Flowers hermaphrodite. Perianth regular, the tube long and slender, the lobes spreading. Anthers all perfect, linear, included in and adnate to the perianth tube. Perigynous scales inserted in the perianth-tube below the middle at first united in a ring round the style, at length free from each other and erect. Ovary sessile, crowned by a ring of long hairs or by 3 plumose awns; style filiform with a terminal dilated stigma; ovule solitary, pendulous, orthotropous. Fruit a narrow nut crowned by a pappus-like coma of long hairs or of 3 plumose awns. Embryo with the cotyledons much shorter than the radicle.—Shrubs. Leaves alternate, dichotomously divided into terete segments. Flowers long, “yellow,” in racemes either terminal or in the upper axils, solitary within small bracts.

The genus is limited to Western extratropical Australia.

- |  |                            |
|--|----------------------------|
| Nut tapering into a short neck crowned by a concave disk bordered<br>by a ring of long hairs. Perianth-tube 1 to 1½ in. long . . . . . | 1. <i>F. fucifolia</i> .   |
| Nut tapering into a long neck crowned by 3 long plumose awns.<br>Perianth-tube 2 in. long . . . . .                                    | 2. <i>F. triaristata</i> . |

**1. *F. fucifolia***, R. Br. in *Trans. Linn. Soc. x.* 157, *Prod. 370*, and *App. Flind. Voy. ii.* 604, t. 6. An erect glabrous often glaucous shrub of 2 to 5 ft., the foliage and flowers and sometimes the whole plant sprinkled with glandular tubercles. Leaves petiolate, repeatedly forked, with erect terete rather thick segments of  $\frac{1}{2}$  to 1 in., the whole leaf 2 to 6 in. long. Racemes terminal or in the upper axils, 3 to 6 in. long, the flowers distant, shortly pedicellate. Bracts ovate, about 1 line long. Perianth-tube slender, slightly contracted above the middle, 1 to 1½ in. long, the lobes linear-lanceolate spreading, about  $\frac{3}{4}$  in. long. After flowering the segments (including the upper part of the claws or tube) fall off to the base of the anthers, and separate without falling to the insertion of the scales at about  $\frac{1}{3}$  of the original tube. Anthers adnate to the top of the cells, the connective shortly produced and free above them. Ovary crowned by a ring of long hairs reaching to the top of the scales, with short hairs within them. Style bearded to the level of the top of the













Liatris sp. 18170377

18170377

coma, densely villous immediately above it, the remainder glabrous with a dilated stigma on a level with the free tips of the anthers. Nut fusiform, glabrous, contracted into a short neck crowned by a dilated concave disk, sometimes 2 lines diameter, bearing on its margin the long coma of simple hairs resembling the pappus of Composite.—Meissn. in Pl. Preiss. i. 530, and in DC. Prod. xiv. 327; Endl. Iconogr. t. 52.

**W. Australia.** King George's Sound and adjoining districts, *R. Brown, Baxter, Drummond*, 4th coll. n. 271, Preiss, n. 755, and others; Tone river, *Oldfield*; eastward beyond Eyre's Range, *Maxwell*.

2. **F. triaristata**, Benth. An erect shrub with the habit and nearly the foliage and inflorescence of *F. fucifolia*, the leaves rather less divided and the ultimate segments shorter. Flowers much larger, the perianth-tube nearly 2 in. long, tapering into a long pedicel, the laminae lanceolate with a fine point, about 1 in. long. Stamens and perigynous scales the same as in *F. fucifolia*, but the coma of the ovary already consisting of 3 slender awns densely plumose with long hairs. Nut on a densely villous stipe of about  $\frac{1}{4}$  in., the nut itself narrow-oblong, nearly  $\frac{1}{2}$  in. long and quite glabrous, tapering into a spirally plumose slender neck attaining 2 to  $2\frac{1}{2}$  in., and then branching into 3 plumose awns, also 2 to  $2\frac{1}{2}$  in. long when fully developed.

**W. Australia, Drummond;** Tone and Capel rivers, *Oldfield*.

TRIBE 4. PERSOONIÆ.—Anthers all perfect, with parallel cells adnate to the connective, the stamens inserted at or below the middle of the perianth-segments. Ovules 2, or sometimes 1. Fruit a drupe or rarely a dry nut or membranous.

### 8. SYMPHYONEMA, R. Br.

Flowers hermaphrodite. Perianth regular, cylindrical in the bud, the segments free or nearly so. Filaments inserted near the base of the segments, free but incurved and united at the end in a ring round the style, the anthers erect and free, the connective very shortly produced beyond the cells. No hypogynous glands. Ovary shortly stipitate; style filiform, with a capitate or slightly dilated terminal stigma; ovules 2, pendulous, orthotropous. Fruit an oblong nut, ripening usually a single seed.—Perennials or undershrubs. Leaves scattered or the lower ones opposite, trichotomously divided into narrow segments. Flowers small, yellow, in rather slender spikes, each one sessile within a small bract.

The genus is limited to Eastern extratropical Australia.

- |   |                          |
|---|--------------------------|
| Leaf-segments flat, linear or linear-lanceolate . . . . . | 1. <i>S. montanum</i> .  |
| Leaf-segments very narrow, semi-terete . . . . .          | 2. <i>S. paludosum</i> . |

1. **S. montanum**, R. Br. in Trans. Linn. Soc. x. 158, Prod. 371. A perennial or undershrub, with erect or shortly decumbent stems of 1 to  $1\frac{1}{2}$  ft., glabrous or the inflorescence very slightly glandular-pubescent.

Leaves shortly petiolate, twice or three times trifid, with short flat linear or linear-lanceolate mucronate-acute segments, the whole leaf 1 to  $1\frac{1}{2}$  in. long. Spikes terminal and in the upper axils forming a terminal panicle of 1 to 2 in., the flowers not very close and at length distant. Bracts very small, broad, acuminate. Perianth nearly 2 lines long. Nut oblong, a little more than 1 line long, obtuse, quite glabrous.—Meissn. in DC. Prod. xiv. 328; Reichb. Iconogr. Exot. t. 107; Endl. Iconogr. t. 12.

**N. S. Wales.** Grose river, *R. Brown*; Blue Mountains, *Sieber*, n. 63, *A. Cunningham*, *Fraser*, *Woolss*, and others; Castlereagh, *C. Moore*.

**2. *S. paludosum***, *R. Br.* in *Trans. Linn. Soc.* x. 158, *Prod.* 371. A glabrous perennial or undershrub, closely resembling *S. montanum*, and perhaps a variety only. It is more diffuse, the leaves rather less divided and the segments very narrow, either semiterete and grooved above or concave, rarely almost flat or the lower leaves even quite flat. Flowers rather smaller and more slender than in *C. montanum*. Fruit the same as in that species.—Meissn. in DC. Prod. xiv. 327; *S. abrotunoides*, Sieb. in Spreng. *Syst. Cur. Post.* 46, and in Roem. and Schult. *Syst.* iii. Mant. 274.

**N. S. Wales.** Port Jackson, *R. Brown*, *Sieber*, n. 61, 62; Argyle County, *Fraser*; Illawarra, *Shepherd*.

### 9. **BELLENDENA**, *R. Br.*

Flowers hermaphrodite. Perianth regular, the segments free, spreading. Stannens inserted at the base of the perianth-segments, but free from them; filaments erect, anthers all perfect, the connective not produced beyond the cells. No hypogynous scales. Ovary shortly stipitate, tapering into a short thick style with a terminal stigma; ovules 2, pendulous, orthotropous. Fruit membranous, compressed, indehiscent, bordered by a very narrow wing, the style reflexed upon one margin.—Shrub. Leaves scattered, toothed at the end, or entire. Flowers small, in a terminal pedunculate dense raceme, without bracts, the pedicels singly scattered, not in pairs.

The genus is limited to a single exclusively Tasmanian species.

**1. *B. montana***, *R. Br.* in *Trans. Linn. Soc.* x. 166, *Prod.* 374. A low glabrous shrub, sometimes under 6 in. high and bushy or tufted, sometimes decumbent and extending to  $1\frac{1}{2}$  or two ft. Leaves usually cuneate, broad or narrow, with 3 obtuse crenatures or short rounded terminal lobes, sometimes again broadly crenate, the whole leaf  $\frac{3}{4}$  to above 1 in. long, tapering into a short petiole, flat but rather thick and sometimes glaucous; in some specimens the leaves are much narrower and almost entire, and in one variety mostly oblong-linear and quite entire. Peduncles terminal, much longer than the leaves, bearing a short dense raceme of small white flowers on pedicels of 2 to 3 lines, the rhachis and sometimes the pedicels minutely hoary-pubescent.













Perianth about  $1\frac{1}{4}$  lines long, the stamens nearly as long. Ovary glabrous. Fruit obovate, 4 to 5 lines long, rounded at the end, but the style quite lateral, reflexed, and almost indented into the upper margin.—Meissn. in DC. Prod. xiv. 348; Hook. f. Fl. Tasm. i. 322; Guillemin. Ic. Pl. Austral. t. 7.

**Tasmania.** Mount Wellington, R. Brown; abundant on Mounts Wellington, Ben Lomond, Surrey hills, &c. at an elevation of 3000 to 5000 ft. J. D. Hooker, and others, the specimens with entire narrow leaves from Ben Lomond, Milligan, Gunn.

### 10. AGASTACHYS, R. Br.

Flowers hermaphrodite. Perianth regular, cylindrical in the bud, the segments free, recurved. Anthers all perfect, on short filaments inserted below the middle of the perianth-segments, the connective shortly produced beyond the cells. No hypogynous glands. Ovary sessile, 3-angled; style rather short, with a thick oblong unilateral stigma; ovule solitary, laterally attached at or near the top. Fruit apparently dry and indehiscent, bordered by 2 broad lateral wings and one narrow dorsal one. Shrub. Leaves crowded, entire. Flowers white, in axillary elongated spikes, each one sessile within a persistent bract.

The genus is limited to a single species, endemic in Tasmania, and quite exceptional in the Order in the form of the ovary style and fruit.

1. **A. odorata**, R. Br. in Trans. Linn. Soc. x. 158, Prod. 371. A stout bushy shrub attaining from 5 to 9 ft., quite glabrous. Leaves crowded, linear-oblong, obtuse, contracted into a very short petiole, rather thick, smooth and shining, veinless or the midrib scarcely conspicuous,  $1\frac{1}{2}$  to 3 in. long. Spikes numerous, solitary in the upper axils, flowering from the base, 3 to 5 in. long, the upper ones crowded into an erect terminal panicle. Flowers sweet-scented. Bracts erect, lanceolate, from half as long to as long as the perianth. Perianth 3 to  $3\frac{1}{2}$  lines long, the segments linear. Style reaching to the base of the anthers, the lateral stigma as long as the rest of the style below it. Fruit not seen quite ripe, but when far advanced and perhaps fully formed it is as long as the subtending persistent bract, with 2 longitudinal rather broad wings almost embracing the rhachis, and one dorsal narrow wing.—Meissn. in DC. Prod. xiv. 328; Hook. f. Fl. Tasm. i. 320.

**Tasmania.** Adventure Bay, R. Brown; S. and W. coasts, Recherche Bay to Port Macquarie, Gunn, Milligan, and others.

### 11. CENARRHENES, Labill.

Flowers hermaphrodite. Perianth regular, ovoid, acuminate in the bud, the segments free, spreading. Stamens inserted at the base of the segments; filaments short, recurved; anthers incurved, broad, the connective produced into a fine point. Hypogynous scales obovate.

Ovary sessile; style short, filiform, with a small terminal stigma; ovule solitary, pendulous. Fruit a drupe, with a succulent exocarp and a hard endocarp.—Shrub or tree. Leaves alternate, toothed. Flowers in spikes, axillary or terminal, each one sessile within a small bract.

The genus is limited to a single species endemic in Tasmania, it is, however, closely allied to *Personaria*, differing chiefly in inflorescence and in the toothed leaves.

1. **C. nitida**, Labill. *Pl. Nov. Holl.* i. 36, t. 50. A tall shrub or small tree, attaining rarely 20 to 30 ft. (*C. Stuart*), quite glabrous, of a bright green, fetid when bruised, turning black in drying. Leaves obovate-oblong or oblong-lanceolate, obtuse, coarsely toothed, contracted into a short petiole, the midrib prominent, otherwise veinless smooth and shining, 3 to 6 in. long. Spikes in the upper axils or several at the ends of the branches, much shorter than the leaves, the rhachis often flexuous but rigid angular and quite glabrous, the flowers rather distant. Bracts small, ovate-triangular, concave. Perianth about 2 lines long, the segments lanceolate, acuminate. Stamens much shorter than the perianth. Ovary short, thick, with a broad pendulous ovule. Drupe very succulent, globular, about  $\frac{1}{2}$  in. diameter.—R. Br. in *Trans. Linn. Soc.* x. 159, Prod. 371; Meissn. in DC. *Prod.* xiv. 328; Hook. f. *Fl. Tasm.* i. 320.

**Tasmania.** Shaded woods, Recherche Bay, Macquarie harbour and Mountains of the interior, A. Cunningham, Gunn, Milligan, and others, but not gathered by R. Brown.

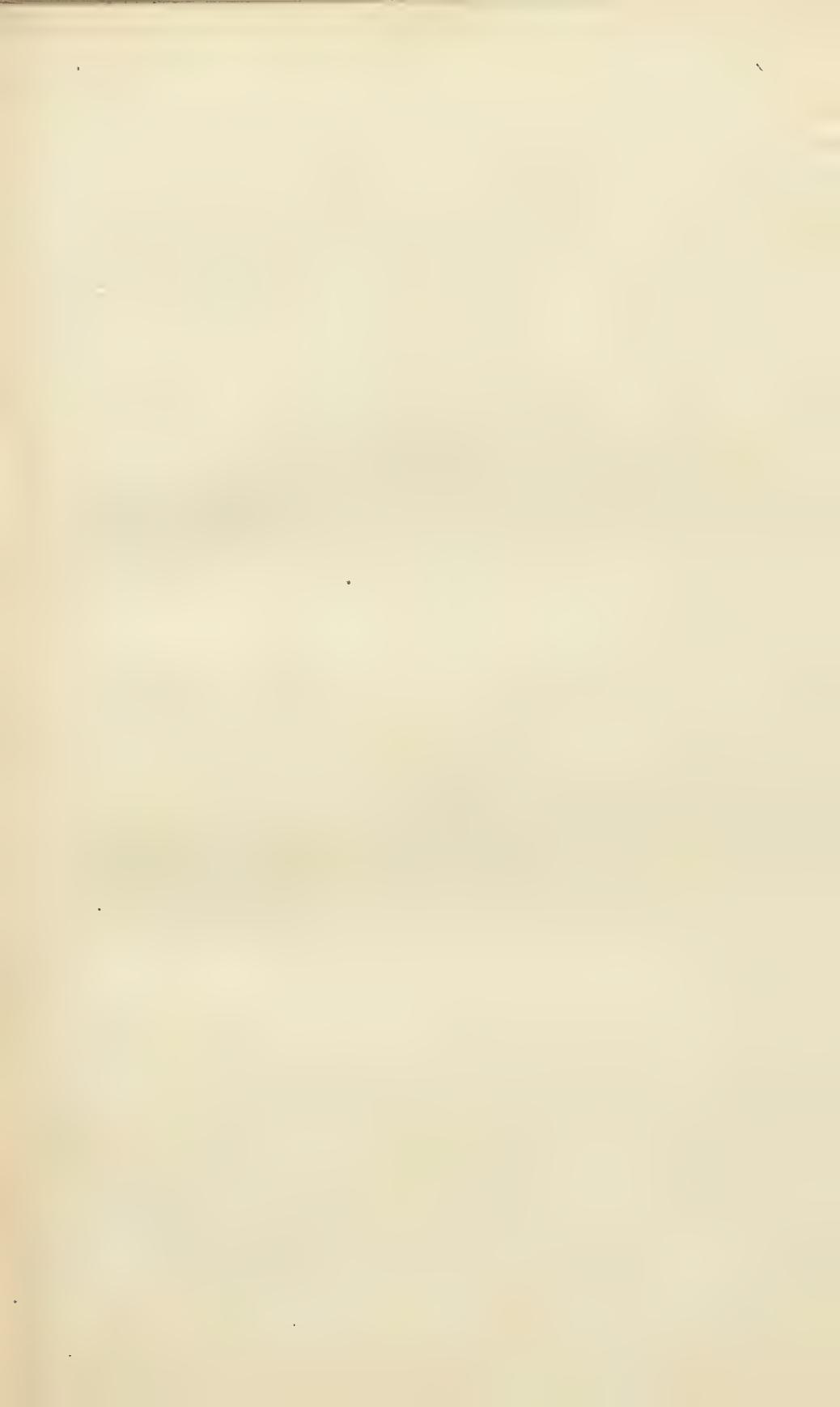
## 12. PERSONIA, Sm.

(*Linkia*, Cav.)

Flowers hermaphrodite. Perianth regular, cylindrical in the bud or constricted above the base, the segments free or nearly so, recurved in the upper portion, the laminae scarcely broader than the claws. Anthers all perfect (except in one species) on short filaments inserted at or below the middle of the perianth-segments, the cells adnate to the connective. Hypogynous scales or glands usually small. Ovary stipitate, (the stipes in a few species very thick and short), with a terminal style either short and inflexed or elongated and filiform, the stigma terminal; ovules 2 or rarely 1, orthotropous, pendulous with short funicles and not strictly collateral, one ovule with a longer funicle or attached lower down than the other. Fruit a drupe, with a succulent exocarp and thick very hard endocarp, either 1-celled and 1-seeded, or obliquely 2-celled with a single seed in each cell.—Shrubs or small trees. Leaves entire, alternate or rarely here and there almost whorled. Flowers yellow or white, solitary in the axils or owing to the abortion or reduction of the floral leaves forming short racemes at first terminal or axillary, or at length at the base of a leafy branch, rarely in slender terminal 1-sided racemes.

With the exception of a single New Zealand species the genus is limited to Australia.

SECT. 1. **Pycnostyles**.—Style short, often as thick as the ovary, incurved or hooked at the end, burying the stigma in a cavity of the upper perianth-segment below the anther. Species all Western except *P. falcata*.





Leaves terete.

Leaves rigid, grooved underneath. Perianth glabrous, 5 lines long, the upper segment saccate, the upper anther abortive

1. *P. hakeiformis.*

Leaves rather rigid, not at all or irregularly grooved. Perianth pubescent, the upper segment concave but not saccate

2. *P. teretifolia.*

Leaves slender, more or less distinctly grooved underneath.

Perianth pubescent, 6 lines long, the upper segment saccate.

Anthers all perfect . . . . .

3. *P. saccata.*

Leaves flat.

Leaves very narrow-linear, 3 to 6 in. long, rigid and doubly grooved underneath

4. *P. Saundersiana.*

Leaves narrow-cuneate, 1-nerved or longitudinally veined.

Perianth upper segment saccate

5. *P. comata.*

Leaves linear-cuneate, 1-nerved. Perianth upper segment concave but not saccate

6. *P. brachystylis.*

Leaves long, falcate, narrow or broad, 1-nerved. Tropical species

7. *P. falcata.*

**SECT. 2. ACRANTHERA.**—Style elongated beyond the anthers, with a terminal stigma. Connective of the anthers produced into an appendage beyond the cells. Species all Western.

Perianth villous, usually ferruginous. Ovary villous (always?)

1-ovulate.

Leaves mostly oblong-lanceolate or spatulate.

Leaves mostly 3-nerved on both sides, not twisted. Flowers clustered. Anther-appendages short . . . . .

8. *P. trinervis.*

Leaves 1-nerved above, 3-nerved underneath, twisted. Flowers solitary. Anther-appendages long . . . . .

9. *P. tortifolia.*

Leaves narrow-linear, almost terete.

Young shoots slightly hoary. Leaves rigid, striate, 1½ to 3 in. long . . . . .

10. *P. angustiflora.*

Young shoots hirsute with spreading hairs. Leaves crowded, 1 to 1½ in. long, channelled above . . . . .

11. *P. rufis.*

Perianth glabrous or pubescent. Ovary glabrous, 2-ovulate (except in *P. striata* and *P. quinquenervis*, and perhaps in *P. acicularis*).

Leaves long, linear-terete . . . . .

12. *P. microcarpa.*

Leaves linear-subulate, pungent-pointed.

Leaves mostly ¼ to 1 in. long. Anther-appendages long and narrow . . . . .

13. *P. sulcata.*

Leaves rarely above ½ in. Anther-appendages very short and thick . . . . .

14. *P. acicularis.*

Leaves narrow-linear, not pungent, with revolute margins.

Perianth pubescent. Style much bent at the base. Leaves mostly above ½ in. . . . .

15. *P. scabrella.*

Perianth glabrous. Style nearly straight. Leaves rarely above ½ in. . . . .

16. *P. dillwynioides.*

Leaves linear or linear-lanceolate, prominently 5-nerved or rarely 3-nerved. Ovary 1-ovulate.

Leaves narrow-linear. Anther-appendages rather long . . . . .

17. *P. striata.*

Leaves broadly linear-spathulate or oblong-lanceolate. Anther-appendages rather short . . . . .

18. *P. quinquenervis.*

Leaves linear-lanceolate or oblong-spathulate, 1-nerved.

Leaves thick, 1 to 2 in. long. Perianth ferruginous-villous.

19. *P. rufiflora.*

Ovary nearly sessile . . . . .

Leaves crowded, scabrous, under 1 in. Perianth glabrous or scarcely pubescent . . . . .

20. *P. scabra.*

Leaves 6 to 8 in. long. Flowers small, glabrous, in slender 1-sided racemes . . . . .

21. *P. graminea.*

SECT. 3. **Amblyanthera.**—Style elongated beyond the anther-cells, with a terminal stigma. Connective of the anthers not produced beyond the cells.

\* Western species. Ovary glabrous, the stipes articulate above the base. Leaves flat.

Leaves linear or linear-lanceolate, falcate, 5 to 8 in. long . . . . . 22. *P. longifolia*.

Leaves oblong-lanceolate, straight, 3 to 6 in. long . . . . . 23. *P. articulata*.

Leaves broadly ovate or elliptical, 1½ to 3 in. long . . . . . 24. *P. elliptica*.

\*\* Eastern species. Stipes of the ovary inarticulate or articulate at the very base.

Ovary villous (rarely almost glabrous in *P. media*).

Leaves glabrous, flat, ovate, obovate, elliptical or broadly lanceolate.

Perianth ferruginous-hirsute . . . . . 25. *P. ferruginea*.

Perianth pubescent with appressed hairs.

Leaves mostly lanceolate. Perianth-segments tipped with dorsal points . . . . . 26. *P. media*.

Leaves mostly elliptical. Perianth-segments without points . . . . . 27. *P. cornifolia*.

Leaves mostly obovate. Perianth-segments tipped with dorsal points . . . . . 28. *P. marginata*.

Leaves pubescent or silky-villous, flat or with recurved margins, from lanceolate to obovate.

Leaves mostly obovate or oblong-spathulate . . . . . 29. *P. sericea*.

Leaves mostly narrow . . . . . 30. *P. Mitchellii*.

Leaves scabrous or hispid, with revolute margins.

Leaves narrow-linear, spreading, incurved, ¼ to 1½ in. long . . . . . 31. *P. fastigiata*.

Leaves oblong, rarely exceeding ¼ in. . . . . 32. *P. hirsuta*.

Leaves smooth, linear-subulate, with recurved margins, about ¼ in. long . . . . . 33. *P. chamæphytis*.

Ovary glabrous. Flowers erect. Leaves flat, veined, mostly about 1½ in., elliptical, falcate, lanceolate or linear, usually glabrous.

Perianth 8 or 9 lines long (6 lines or under in all the following species) . . . . . 34. *P. arborea*.

Leaves mostly falcate, 4 to 8 in. long. Pedicels 2 to 4 lines long . . . . . 35. *P. salicina*.

Stems prostrate or trailing. Leaves usually short and broad. Pedicels short . . . . . 36. *P. prostrata*.

Stems erect. Leaves rarely above 4 in. when narrow, always shorter when broad.

Leaves mostly lanceolate or elliptical. Pedicels very short.

Flowers solitary or rarely 2 together . . . . . 37. *P. lanceolata*.

Flowers in axillary short racemes or clusters of 6 to 10 . . . . . 38. *P. confertiflora*. (See also 26. *P. media*).

Leaves linear-lanceolate, acute, rather long. Pedicels 1 to 3 lines long . . . . . 39. *P. lucida*.

Leaves linear, often very narrow. Flowers axillary. Ovary 2-ovulate . . . . . 40. *P. linearis*.

Leaves filiform. Flowers in dense racemes with short floral leaves. Ovary 1-ovulate . . . . . 41. *P. pinifolia*.

Ovary glabrous. Flowers erect on very short pedicels. Leaves with recurved margins or sometimes flat, usually obtuse, veinless, glabrous or silky underneath, not exceeding 2 in.

Perianth about 5 lines long.

Leaves narrow-linear. Perianth-segments tipped with subulate points . . . . . 42. *P. Caleyi*.

Leaves oblong-linear. Perianth segments without points . . . . . 43. *P. ledifolia*.

Leaves from ob-vate-oblong to oblong-lanceolate, very obtuse . . . . . 44. *P. revoluta*.

Perianth about 9 lines long. Leaves flat, thick, very obtuse . . . . . 45. *P. Gunnii*.

- Ovary glabrous. Flowers erect, almost sessile. Leaves with much recurved or revolute margins, narrow, acute, nerveless, silky underneath.
- Leaves spreading, smooth above, lanceolate or linear-lanceolate,  $1\frac{1}{2}$  to  $2\frac{1}{2}$  in. long . . . . . 46. *P. mollis*.
- Leaves incurved, scarious above,  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. long.
- Leaves spatulate or linear-spatulate. Perianth villous . . . . . 47. *P. rigidz.*
  - Leaves narrow-linear. Perianth pubescent . . . . . 48. *P. curvifolia*.
- Ovary glabrous (rarely with a few hairs in *P. oblongata*). Flowers spreading or nodding. Leaves flat or with recurved margins, the midrib conspicuous, under  $1\frac{1}{2}$  in. long.
- Leaves ovate-lanceolate (1 to  $1\frac{1}{2}$  in.). Pedicels about  $\frac{1}{2}$  in. long. Perianth glabrous, without points . . . . . 49. *P. oblongata*.
- Leaves broad or lanceolate, under 1 in. Pedicels 1 to 4 lines long.
- Leaves ovate, flat ( $\frac{1}{2}$  to 1 in.). Perianth glabrous, with long points to the segments . . . . . 50. *P. Cunninghamii*.
- Leaves lanceolate to almost ovate, flat ( $\frac{1}{2}$  to 1 in.) Perianth pubescent, with moderate points . . . . . 51. *P. myrtilloides*.
- Leaves ovate (2 to 3 lines) to lanceolate (3 to 6 lines). Perianth glabrous, without points . . . . . 52. *P. oxyccoides*.
- Leaves narrow-linear . . . . . 53. *P. nutans*.
- Ovary glabrous. Leaves linear (broad or narrow), concave or grooved above or nearly flat without any prominent midrib.
- Leaves mostly 1 to  $1\frac{1}{2}$  in. long.
- Leaves oblong-linear or linear-lanceolate,  $1\frac{1}{2}$  to 2 lines broad. Pedicels short and thick . . . . . 54. *P. angulata*.
  - Leaves narrow-linear. Pedicels slender . . . . . 55. *P. virgata*.
- Leaves mostly  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long.
- Leaves narrow-linear, not pungent. Ovary 1-ovulate . . . . . 56. *P. chamæpeuce*.
  - Leaves narrow-linear or subulate, pungent-pointed . . . . . 57. *P. juniperina*.
  - Leaves filiform, not pungent.
    - Ovary 2-ovulate. Perianth-segments without points . . . . . 58. *P. tenuifolia*.
    - Ovary 1-ovulate. Perianth-segments with subulate points 59. *P. acerosa*.

SECT. 1. PYCNOTYLLIS, Meissn.—Style short, often as thick as the ovary, incurved or hooked at the end, burying the stigma in a cavity of the upper perianth-segment below the anther.

1. **P. hakeæformis**, Meissn. in DC. Prod. xiv. 330. A very rigid shrub, the young shoots and inflorescence softly pubescent or villous. Leaves terete, very spreading, mostly recurved at the end, grooved underneath, thick and rigid, 1 to 2 in. long. Pedicels 2 to 3 lines long, softly villous, crowded into a terminal or subterminal raceme, with most of the floral leaves reduced to small bracts. Perianth glabrous, not above 5 lines long, the upper segment saccate below the anther, which is quite adnate and almost or quite sterile, the other anthers free except at the base, the connective produced into a thick obtuse appendage. Ovary glabrous, contracted at the base into a thick stipe, and tapering into a short thick style curved and hooked at the end, with a lateral stigma buried in the cavity of the upper perianth-segment. Fruit not seen.

**W. Australia**, Drummond, 4th coll. n. 275.

2. **P. teretifolia**, R. Br. in Trans. Linn. Soc. x. 160, Prod. 372. A bushy shrub of several ft., the young shoots and inflorescence ferrugi-

nous-tomentose or shortly villous, the adult foliage glabrous. Leaves terete, rather slender but rigid, not continuously grooved, although sometimes irregularly so owing to the shrivelling in drying, 1½ to 3 in. long but mostly about 2 in., the floral ones similar or a few of them much reduced in size. Pedicels 1 to 2 lines long, solitary in the axils but sometimes crowded at the base or at the end of a shoot with the lower floral leaves abortive. Perianth declinate, ferruginous-pubescent, about ½ in. long, the upper segment very concave but not saccate. Anthers all perfect, the connective produced into a long point. Ovary scarcely contracted at the base, tapering into short thick style, curved against the upper perianth-segment below the anthers, ovules 2. Drupe obliquely ovoid-oblong, ½ in. long or more.—Meissn. in DC. Prod. xiv. 329; *P. scoparia*, Meissn. l.c.

**W. Australia.** Lucky Bay, *R. Brown*; King George's Sound towards Cape Riche and Salt river, *Harvey, Baxter, Drummond*, 4th coll. n. 276.

Var. ? *amblyanthera*. Appendage to the anthers short and obtuse, the specimens showing no other difference, yet perhaps a distinct species.—Murchison river, *Oldfield*.

**3. *P. saccata*, *R. Br. Prot. Nov. 12.*** An erect shrub of 2 to 6 ft., the young shoots and inflorescence pubescent or villous, the adult foliage glabrous. Leaves linear-terete, sometimes almost filiform, 2 to 4 in. long or even longer, more or less distinctly grooved underneath or the groove doubled by the prominence of the midrib between the recurved or thickened margins, but the groove always very narrow and sometimes very faint. Pedicels 2 to 3 lines long, mostly at the ends or below the ends of the branches and crowded into racemes with the floral leaves much reduced or abortive, rarely all axillary. Perianth very oblique, pubescent, about ½ in. long, the upper segment saccate below the anther. Anthers all perfect, the connective produced into a rather long point. Ovary contracted into a rather short thick style curved into the cavity of the upper perianth-segment. Ovules 2. Fruit obovoid, rather shorter and thicker than in *P. teretifolia*.—Meissn. in DC. Prod. xiv. 329; *P. Fraseri*, *R. Br. Prot. Nov. 12*, not of Meissn.; *P. macrostachya*, Lindl. Swan Riv. App. 35; Meissn. in Pl. Preiss. i. 531, and in DC. Prod. xiv. 330.

**W. Australia.** West coast, *Baudin's Expedition*; Swan river, *Fraser, Drummond*, 1st coll. n. 598, *Preiss*, n. 730, Cape Naturaliste, *Collie*; Donnelly river, *T. C. Carey*. The specimens of *P. Fraseri*, both in Brown's and in Hooker's herbarium, have lost all their flowers, but in other respects correspond entirely with the *P. saccata*, evidently a common plant about Swan river.

**4. *P. Saundersiana*, *Kipp.*; *Meissn.* in *Hook. Kew Journ.* vii. 72, and in *DC. Prod.* 330.** Branches virgate, pubescent or villous, the adult foliage glabrous. Leaves linear, 3 to 6 in. long, flat but thick, rigid and very narrow, with a double groove on each surface formed by the prominent midrib and marginal or submarginal nerves. Pedicels 3 to 4 lines long, villous, all axillary or crowded at the base of the shoots with the lower floral leaves abortive. Perianth glabrous or slightly pubescent with appressed hairs, about ½ in. long, the upper segment saccate





below the anther. Anthers all perfect, the connective produced into an obtuse appendage. Ovary broad, scarcely contracted at the base, tapering into a cylindrical style, hooked at the end under the upper anthers. Ovules 2. Young fruit obliquely ovoid-globular.

**W. Australia.**, *Drummond*, 5th coll. suppl. n. 4.

5. **P. comata**, Meissn. in Hook. *Kew Journ.* vii. 71, and in *DC. Prod.* xiv. 330. A low shrub with erect branches softly pubescent as well as the young shoots, the adult foliage glabrous. Leaves linear-cuneate or oblanceolate, 1½ to 3 in. long, obtuse with a small point, contracted into a short petiole, of a pale green, thick and rigid, with nerve-like margins and a prominent midrib, and when broad with several very obscure oblique almost longitudinal veins. Pedicels 2 to 6 lines long, villous, axillary or forming a raceme at the base of the shoots with the lower floral leaves reduced to small bracts. Perianth shortly pubescent, rather above ½ in. long, very oblique with a short incurved point, the upper segment saccate below the anther. Anthers all perfect, the connective produced beyond the cells. Ovary glabrous, contracted into a short thick stipes, thickened upwards and incurved, with an oblique stigma buried in the cavity of the upper perianth-segment. Ovules 2.

**W. Australia.** Murchison river, *Oldfield*; near Dundagaran, *Drummond*, 6th coll. n. 178.

6. **P. brachystylis**, F. Muell. *Fragm.* vi. 221. An erect shrub of several ft., the branches and young leaves softly tomentose, the adult foliage glabrous. Leaves linear-cuneate, 1 to 2 in. long, obtuse with a small callous point, contracted into a short petiole, thick and rigid, with the midrib and margins prominent underneath. Pedicels axillary, 2 to 4 lines long. Perianth oblique, with a short recurved point, more or less silky-hairy, about 5 lines long, the upper segment concave below the anthers but not saccate. Anthers all perfect, rather long, the connective produced into a short obtuse appendage. Ovary glabrous, contracted into a short thick stipes, tapering into a short thick incurved style concealing the stigma under the upper anthers. Ovules 2.

**W. Australia.** Murchison river, *Oldfield*.

7. **P. falcata**, R. Br. in *Trans. Linn. Soc.* x. 162, *Prod.* 373. Usually a small tree, glabrous or the young shoots minutely tomentose-pubescent. Leaves linear or lanceolate, falcate, 4 to 8 in. long, and very variable in width, obtuse or acuminate, contracted into a petiole, the midrib prominent, the margins usually nerve-like, the lateral veins obscure or fine and very oblique. Pedicels slender, ¼ to ½ in. long, glabrous as well as the perianth or very minutely hoary-pubescent, sometimes all axillary, but more frequently forming a long raceme with the lower floral leaves reduced to bracts and growing out at the end into a leafy shoot. Ovary glabrous, of nearly uniform thickness with the short stipes and incurved style, the stigma oblique under the upper anther. Anthers all perfect, but the upper one usually smaller, the connective produced into a long

or short point.—Meissn. in DC. Prod. xiv. 331; *P. nimosoides*, A. Cunn. Herb.

**N. Australia.** Islands of the Gulf of Carpentaria, *R. Brown*; M'Adams Range, *F. Mueller*; Escape Cliff, *Hulls*; Victoria river, *Bynoe*; Cygnet Bay, N.W. coast, *A. Cunningham* (a narrow-leaved form, with the pedicels only remaining, but apparently rather this species than *P. longifolia*).

**Queensland.** Cape York, *Diamond*; Dayman's island, Endeavour Straits, *W. Hill*; Endeavour river, *A. Cunningham*, *W. Hill*; Estuary of the Burdekin, *Fitzalan*; Kennedy district, *Daintree*; Edgecombe and Rockingham Bays, *Dallachy*; Cape and Bowen rivers, *Bowman*.

**SECT. 2. ACRANTHERA.** Style elongated beyond the anthers, with a terminal stigma. Anthers all perfect, the connective produced into an appendage beyond the cells.

**8. P. trinervis**, Meissn. in DC. Prod. xiv. 332. A shrub with the young shoots silky-pubescent or villous, the adult foliage glabrous. Leaves oblong-lanceolate or linear-spathulate, obtuse with a callous point, narrowed into a short petiole, thick and rigid, 3-nerved but the lateral nerves often almost marginal and less conspicuous on the upper than on the under surface, 1 to 2 in. long. Flowers several together clustered in the axils, sessile or on very short thick pedicels, each within a small villous bract. Perianth densely villous with ferruginous hairs, very obtuse, about 5 lines long. Anthers with very short obtuse appendages to the connective. Ovary densely villous, contracted into a very short stipe; style straight, rather thick but elongated, with a terminal stigma; ovule solitary.

**W. Australia**, Drummond, 5th coll. suppl. n. 5.

**9. P. tortifolia**, Meissn. in DC. Prod. xiv. 331. Stems in our specimens several from a woody rhizome, branching, not above 1 ft. high, the branches and young shoots silky or hoary-pubescent, the foliage at length glabrous or nearly so. Leaves oblong- or linear-lanceolate, rarely almost obovate, mucronate, contracted into a short petiole, spirally twisted at least when dry, coriaceous, 1-nerved on the upper surface, mostly 3-nerved underneath, under 1 in. or a few of the larger ones  $1\frac{1}{2}$  in. long. Flowers solitary in the axils on very short pedicels. Perianth about  $\frac{1}{2}$  in. long, silky-ferruginous with appressed hairs. Anthers with rather long narrow appendages to the connective. Ovary densely villous, on a glabrous stipe, tapering into a long straight glabrous style, with a terminal stigma; ovule solitary.

**W. Australia**, Drummond, n. 169, 4th coll. n. 272.

**10. P. angustiflora**, Benth. A shrub of about 1 ft., the erect branches minutely hoary-tomentose, the foliage glabrous. Leaves very narrow linear or terete as in *P. microcarpa*, but usually more rigid, rarely above 3 in. long, and the thicker midrib and more prominent margins give them a more striate or doubly grooved appearance. Flowers usually 2 or 3 together in the axils, on pedicels of 1 to 2 lines. Perianth fully  $\frac{1}{2}$  in. long, narrower than in *P. microcarpa*, silky-villous with ful-

vous hairs. Anthers with rather long points or appendages to the connective. Ovary shortly stipitate, densely villous; style straight, elongated; ovule solitary.—*P. Fraseri*, Meissn. in Pl. Preiss. i. 532, and in DC. Prod. xiv. 334, not of R. Br.

**W. Australia.** Swan river, Drummond, 1st coll. n. 597, Preiss, n. 729.

Var ? *pedicularis*. Pedicels 3 to 6 lines long. Flowers much less villous or sprinkled only with a few hairs. Ovary not thickened, and the ovule abortive in the flowers examined.—Murchison river, Oldfield.

11. **P. rufus**, Meissn. in DC. Prod. xiv. 333. A shrub apparently spreading or procumbent, the younger parts densely hirsute with soft spreading hairs, the older foliage glabrous or nearly so. Leaves crowded, linear-subulate, nearly terete, grooved without any prominent midrib, acute but not pungent, the longer ones on the main stem sometimes 2 in. but mostly about 1 in. long. Pedicels axillary, solitary, 1 to 2 lines long. Perianth about  $\frac{1}{2}$  in. long, hirsute with a few long spreading hairs. Anthers with long points or appendages to the connective. Ovary on a short narrow stipe, densely hirsute with long hairs, tapering into a long hirsute style with a terminal stigma. Ovule solitary.

**W. Australia.** Drummond, 4th coll. n. 273.

12. **P. microcarpa**, R. Br. in Trans. Linn. Soc. x. 160, Prod. 372. An erect broom-like shrub of 3 to 5 ft., the young shoots villous with fine appressed hairs, the adult foliage glabrous. Leaves terete and more or less grooved underneath, or very narrow linear and flat with a scarcely prominent midrib, acute, 2 to 4 in. long. Flowers axillary, usually in clusters of 2 or 3, on very short villous pedicels rarely exceeding 1 line. Bracts ovate or lanceolate, villous, sometimes as long as the pedicels. Perianth villous with appressed hairs, 4 to 5 lines long. Anthers inserted nearly at the base of the perianth-segments, the connective produced into a short broad appendage. Ovary glabrous, very shortly stipitate, tapering into a thick style recurved at the end with an oblique stigma, but longer than the anthers; ovules 2. Drupe small, nearly globular.—Meissn. in DC. Prod. xiv. 334.

**W. Australia.** King George's Sound and adjoining districts, R. Brown, A. Cunningham, Drummond, 3rd coll. n. 260, Preiss, n. 728, and many others.

13. **P. sulcata**, Meissn. in DC. Prod. xiv. 333. A much-branched shrub, apparently divaricate or procumbent, glabrous or with a slight pubescence on the branches. Leaves crowded, spreading, subulate, rigid and pungent-pointed, doubly grooved by the prominent margins and midrib, mostly  $\frac{3}{4}$  to 1 in. long. Pedicels axillary, solitary, 1 to 3 lines long, glabrous. Perianth glabrous, acute, about 4 lines long, rather attenuate towards the base. Anthers with long narrow appendages or points to the connective. Ovary glabrous, contracted into a short stipe, and tapering into an elongated angular straight style with a terminal stigma; ovules 2.

**W. Australia.** Drummond, n. 168, 4th coll. n. 274.

14. **P. acicularis**, F. Muell. *Fragm.* vi. 220. A rigid shrub of about 1 ft. (*Oldfield*), the branches shortly villous, the foliage glabrous or sprinkled with a few short rigid hairs. Leaves crowded, spreading, linear-subulate, rigid and pungent-pointed, doubly grooved as in *P. sulcata*, but rarely exceeding  $\frac{1}{2}$  in. in length. Pedicels axillary, solitary, glabrous, 3 to 4 lines long. Perianth fully 5 lines long, quite glabrous, contracted above the broad base, the segments very acute. Anthers with the connective produced into very short thick and obtuse appendages. Ovary glabrous, contracted into a short stipe and tapering into an elongated straight style.

**W. Australia.** Sandy plains, Murchison river, *Oldfield*. In the only ovary I examined I only found one ovule, but I may have overlooked a second abortive one, and the specimens were too few to sacrifice more flowers.

15. **P. scabrella**, Meissn. in *Hook. Kew Journ.* vii. 72, and in *DC. Prod.* xiv. 333. A rigid shrub with erect branches minutely pubescent when young. Leaves crowded, incurved, linear-terete, thick and rigid, deeply grooved underneath but without any prominent midrib, obtuse or callous-pointed, glabrous or minutely scabrous when young,  $\frac{1}{2}$  to 1 in. long. Flowers solitary in the axils and sessile. Perianth about 4 lines long, villous with appressed hairs, contracted at the base. Anthers with small globular tips to the connective. Ovary on a slender stipe, broad and glabrous; style folded immediately above the ovary, then erect and filiform with a terminal stigma. Ovules 2.

**W. Australia.** Between Moore and Murchison rivers, *Drummond*, 6th coll. n. 177.

16. **P. dillwynioides**, Meissn. in *DC. Prod.* xiv. 333. A bushy glabrous shrub. Leaves crowded, narrow-linear or terete, grooved underneath but without any prominent midrib, obtuse or scarcely acute, rarely above  $\frac{1}{2}$  in. long, quite smooth and glabrous. Pedicels solitary in the axils, very short. Perianth glabrous, about 5 lines long, slightly contracted above the base. Anthers with very short obtuse appendages to the connective. Ovary shortly stipitate, glabrous, tapering into a long style with a terminal stigma; ovules 2. Drupe broad and very oblique, 4 to 5 lines diameter.

**W. Australia,** *Drummond*, 5th coll. n. 403; *Fitzgerald river, Maxwell*.

17. **P. striata**, R. Br. *Prot. Nov.* 13. Quite glabrous or the branches silky-pubescent. Leaves linear, obtuse or mucronate-acute, contracted into a short petiole, flat but thick, striate with 3 to 5 prominent closely approximate longitudinal nerves, glabrous or minutely papillose, 1 to  $1\frac{1}{2}$  in. long. Pedicels solitary in the axils, 2 to 3 lines long. Perianth glabrous or slightly pubescent, 4 to 5 lines long. Anthers with the connective produced into an appendage usually rather long but variable. Ovary glabrous, slightly contracted into the stipes, tapering into a straight filiform style with a terminal stigma. Ovule solitary. Drupe ovoid, oblique, 4 to 5 lines long.—Meissn. in *DC. Prod.* xiv. 332; *P. striolata*, Meissn. l.c.

**W. Australia.** King George's Sound or to the eastward, *Baxter*, *Drummond*, 5th coll. suppl. n. 6; near W. Mount Barren, *Maxwell*.

18. **P. quinquenervis**, Hook. Ic. Pl. t. 425. A shrub of 5 to 7 ft., the branches slightly pubescent. Leaves broadly linear-spathulate or oblong-lanceolate, mucronate, contracted into a short petiole, rigid, with 5 prominent longitudinal nerves, glabrous or minutely papillose, 1 to 1½ in. long. Pedicels solitary in the axils, ¼ to ½ in. long, glabrous or slightly pubescent. Perianth nearly ½ in. long, glabrous or sprinkled with a very few small hairs. Anthers with rather short appendages to the connective. Ovary slightly contracted into a short stipes; style straight, with a broad terminal stigma. Ovule solitary.—Meissn. in Pl. Pr. i. 532, and in DC. Prod. xiv. 332.

**W. Australia.** Swan river, Drummond, 1st coll. n. 596; York district, Preiss. n. 531, 731. The species scarcely differs from *P. striata*, except in the broader leaves and rather larger flowers, and perhaps in stature.

19. **P. rufiflora**, Meissn. in Hook. Kew Journ. vii. 72, and in DC. Prod. xiv. 332. A shrub at first sight closely resembling *P. trinervis*, but very different in the structure of the flower, the young branches slightly pubescent, the foliage glabrous. Leaves oblong-linear or slightly spathulate, obtuse with a minute point, contracted into a very short petiole, thick, 1-nerved with thickened nerve-like margins or rarely with intramarginal nerves on the under side, 1 to 2 in. long. Flowers sessile or nearly so, solitary or 2 or 3 together in the axils. Perianth about 4 lines long, very densely ferruginous-villous. Anthers not reaching above half the length of the segments, with short gland-like appendages to the connective. Ovary abruptly stipitate, broad, glabrous; style elongated, slender, with a terminal stigma. Ovules 2.

**W. Australia.** Between Moore and Murchison rivers, Drummond, 6th coll. n. 176.

20. **P. scabra**, R. Br. in Trans. Linn. Soc. x. 162, Prod. 373. Apparently a bushy shrub, the branches pubescent. Leaves crowded, linear-lanceolate or more or less spathulate but never so much so as in some Eastern species, obtuse or mucronate-acute, contracted at the base, ½ to 1 in. long, 1-nerved, seaceous with small papillæ or crystalline or opaque asperities. Flowers solitary in the axils on short pedicels. Perianth glabrous, or sprinkled with a few hairs, about 5 lines long. Anthers with the connective produced into rather long appendages. Ovary stipitate, glabrous, with a straight filiform style and stigma.—Meissn. in DC. Prod. xiv. 337; *P. flexifolia*, R. Br. in Trans. Linn. Soc. x. 162, Prod. 372, not of Lodd. and others; *P. spathulata*, R. Br. II. cc. 162 and 373, not of Lodd. and others.

**W. Australia.** Lucky Bay, R. Brown. The only specimens that I have seen of these three supposed species are the almost single and very unsatisfactory ones in Brown's Herbarium, with scarcely any flowers. They are all from the same locality, and the differences between them appear to me to be very slight, no more than what we constantly observe between different specimens of other species. In *P. flexifolia* the leaves are rather smaller and narrower than in *P. scabra*, and there are fewer hairs on the perianth; in *P. spathulata* the leaves are rather larger and broader, with similar slightly hairy perianths. All three agree in the habit and other characters which distinguish them from any that I have seen in other collections. Meissner places them in

a wrong section, but was misled by Lodrigue's figures representing garden plants falsely named, his *P. flexifolia* being *P. rotans*, and *P. spathulata* most probably *P. rigida*, both of them eastern species of the section *Amblyanthera*.

**21. *P. graminea*, R. Br. in Trans. Linn. Soc. x. 164, Prod. 374.** A dwarf shrub or undershrub, with short procumbent stems, glabrous except a few appressed hairs sprinkled on the young shoots and inflorescence. Leaves numerous, erect, narrow-linear or very rarely linear-lanceolate, acute, flat, but the midrib and sometimes the margins prominent underneath, mostly 6 to 8 in. long, or even more. Flowers small, distant, in slender one-sided leafless racemes, terminal or in the upper axils, not half so long as the leaves. Bracts subulate. Pedicels solitary within each bract,  $\frac{1}{2}$  to 1 line long. Perianth about 2 lines long, glabrous or sprinkled with a few appressed transparent hairs. Anthers rather short, the connective produced into a long slender appendage. Ovary glabrous, globular, on a short stipe. Style thick but elongated, angular, tapering upwards, with a terminal oblique stigma. Ovules 2.—Meissn. in Pl. Preiss. i. 533, and in DC. Prod. xiv. 331.

**W. Australia.** King George's Sound, *R. Brown*, *Baxter*, *Drummond*, *Preiss*, n. 725; Wilson's Inlet, *Oldfield*. This is the only species with a truly racemose inflorescence, without the rhachis growing out into a leafy shoot.

**SECT. 3. AMBLYANTHERA.**—Style elongated beyond the anthers, with a terminal stigma. Anthers all perfect, the connective not produced beyond the cells.

**22. *P. longifolia*, R. Br. in Trans. Linn. Soc. x. 164, Prod. 374.** A tall shrub or small tree of 10 to 20 ft., glabrous or the young branches minutely silky-pubescent. Leaves linear or linear-lanceolate, 5 to 8 in. long, callous-pointed or obtuse, narrowed into a short petiole, not thick, finely veined, the midrib slightly prominent, the lateral veins almost longitudinal and scarcely conspicuous. Flowers solitary in the axils but owing to the abortion of the lower or of nearly all the floral leaves forming often terminal or subterminal racemes. Pedicels 3 to 6 lines long. Perianth more or less ferruginous with minute silky hairs, 5 to 6 lines long. Anther-connective not produced beyond the cells. Ovary glabrous, on a stipes distinctly articulate above the base; style elongated with a terminal stigma; ovules 2. Drupe broad and oblique, about 5 lines diameter.—Meissn. in Pl. Preiss. i. 533, and in DC. Prod. xiv. 343; *P. Drummondii*, Lindl. Swan Riv. App. 35.

**W. Australia.** King George's Sound, *R. Brown* and others, and thence to Swan river, *Drummond*, 1st coll. and n. 89, *Preiss*, n. 724, 732; Vasse river, *Mrs. Molloy*; Cape Naturaliste, *Collie*.

**23. *P. articulata*, R. Br. in Trans. Linn. Soc. x. 164, Prod. 374.** A tall shrub or small tree, closely resembling *P. longifolia* and intermediate as it were between that species and *P. elliptica*. Leaves much broader than in *P. longifolia* and not falcate, oblong-lanceolate or oblanceolate, 3 to 6 in. long, with very oblique almost longitudinal anastomosing lateral veins. Inflorescence as in *P. longifolia* often racemose from the

abortion or reduction of the floral leaves. Flowers usually larger than in that species, the perianth fully  $\frac{1}{2}$  in. long. Anthers and pistil the same, but the articulation of the stipes of the ovary rather more prominent, being often above the level of the hypogynous glands.—Meissn. in DC. Prod. xiv. 342.

**W. Australia.** King George's Sound, R. Brown, Baxter, Harvey, Drummond, n. 88, 96, Oldfield, F. Mueller; Vasse river, Oldfield.

24. **P. elliptica**, R. Br. in *Trans. Linn. Soc.* x. 164, Prod. 373. A shrub or tree of 10 to 20 ft., quite glabrous. Leaves from broadly obovate to elliptical or broadly lanceolate, obtuse with a callous point or almost acute when narrow, contracted into a short petiole, not thick, pinniveined with oblique anastomosing veins, 1 $\frac{1}{2}$  to near 3 in. long. Pedicels 1 to 2 lines long, mostly axillary and solitary but sometimes forming racemes by the abortion or reduction of the floral leaves as in the two preceding species. Perianth glabrous, 4 to 5 lines long. Anther-connective not produced beyond the cells. Ovary glabrous, on a stipe articulate near the base; style elongated, with a terminal stigma. Ovules 2.—Meissn. in DC. Prod. xiv. 341; *P. laureola*, Lindl. Swan Riv. App. 35; Meissn. in Pl. Preiss. i. 532, and in DC. Prod. xiv. 341; Hook. Ic. Pl. t. 426.

**W. Australia.** King George's Sound and adjoining districts, R. Brown, Baxter, A. Cunningham, and many others, and thence to Swan river, Drummond, 1st coll., 4th coll. n. 277, Preiss, n. 726, Clarke.

The articulation of the stipes, so conspicuous in the three preceding Western species, is also observable in most of the following Eastern species, but it is much less marked and usually at the very base of the stipes, not forming a ring above the base.

25. **P. ferruginea**, Sm. *Erot. Bot.* ii. 47, t. 83. A tall shrub, the branches and young shoots slightly ferruginous or hoary-tomentose, the adult foliage glabrous. Leaves ovate oblong-elliptical or almost lanceolate, acute or obtuse with a callous point, contracted at the base and sometimes shortly petiolate, 2 to 3 or rarely 4 in. long, the midrib prominent underneath and obscurely or distinctly pinniveined. Flowers either solitary in the axils or more frequently in dense clusters of 4 to 6, either terminal or pedunculate in the upper axils, with small bracts (reduced floral leaves) under each flower. Pedicels very short or scarcely any. Perianth densely ferruginous-pubescent, about 6 lines long. Anther-connective not produced beyond the cells. Ovary densely villous, on a short glabrous pedicel; style elongated, with a terminal stigma; ovules 2.—R. Br. in *Trans. Linn. Soc.* x. 163, Prod. 373; Meissn. in DC. Prod. xiv. 343 (except as to F. Mueller's specimens); *P. laurina*, Pers. Syn. i. 118.

**N. S. Wales.** Port Jackson and Blue Mountains, R. Brown, Sieber, n. 58, A. Cunningham and others. The Victorian plant referred here by Meissner having the ovary quite glabrous, is much nearer to *P. lanceolata*, and is described below as *P. confertiflora*.

26. **P. media**, R. Br. *Prot. Nov.* 16. A tall erect shrub, the young branches ferruginous-pubescent. Leaves lanceolate or almost elliptical,

sometimes oblique or slightly falcate, acuminate or acute, contracted into a short petiole, 2 to 4 in. long, flat thin and glabrous, very obliquely veined. Pedicels axillary, 1 to 2 lines long, ferruginous or glabrous, solitary or very rarely irregularly clustered. Perianth fully 5 lines long, pubescent with short appressed hairs, the segments tipped with short subulate points. Anther-connective not produced beyond the cells. Ovary more or less silky-hirsute but usually much less so than in *P. ferruginea* and *P. cornifolia* and the hairs sometimes almost disappearing, the stipes glabrous; style elongated, with a terminal stigma; ovules 2.—Meissn. in DC. Prod. xiv. 342.

**Queensland.** Brisbane river, Moreton Bay, *Fraser, W. Hill, F. Mueller.*

**N. S. Wales.** Hastings and Clarence rivers, *Beckler.*

Some specimens come near to some varieties of *P. lanceolata*, but independently of the hairs of the ovary, *P. media* has usually thinner, more veined leaves, larger pedicels, and more prominent subulate tips to the perianth-segments.

**27. *P. cornifolia*, A. Cunn.; R. Br. Prot. Nov. 16.** A tall erect shrub, the branches pubescent, the young leaves ciliate on the margins and sometimes pubescent, the adult foliage glabrous. Leaves from broadly obovate or ovate to elliptical-oblong or even broadly lanceolate, acute when narrow or obtuse when broad, usually mucronate, contracted into a very short petiole, mostly 1 to 2 in. long, flat, rather rigid, the midrib slightly prominent and sometimes obscurely and very obliquely veined. Pedicels solitary in the axils or clustered on a very short axillary branch with the floral leaves reduced or abortive, sometimes very short, rarely 2 to 3 lines long. Perianth shortly silky-pubescent, 5 to 6 lines long, without points to the segments. Anther-connective not produced beyond the cells. Ovary densely silky-villous, on a very short glabrous stipes; style elongated, with a terminal stigma; ovules 2.—Meissn. in DC. Prod. xiv. 341; *P. tinifolia*, A. Cunn. Herb.

**Queensland.** Logan and Brisbane rivers, Moreton Bay and island, *Fraser, A. Cunningham, F. Mueller, and others.*

**N. S. Wales.** Macleay, Clarence, and Richmond rivers, *Beckler, C. Moore; New England, C. Stuart.*

The foliage of this species is very variable, but the leaves are usually shorter, broader, and less veined than in the preceding species, and the perianth has neither the ferruginous hairs of *P. ferruginea* nor the sulcate tips of *P. media*; the hairs of the ovary are constantly dense.

**28. *P. marginata*, R. Br. Prot. Nov. 16.** A shrub with pubescent branches. Leaves ovate obovate or broadly elliptical-oblong, mucronate, contracted at the base but scarcely petiolate,  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. long, flat, coriaceous, glabrous and often shining, the midrib prominent underneath, more or less distinctly pinniveined and sometimes 3-nerved. Pedicels exceedingly short, pubescent, solitary or clustered with much reduced or abortive floral leaves. Perianth slightly pubescent, about 5 lines long, the segments tipped with horn-like dorsal points. Anther-connective not produced beyond the cells. Ovary densely hirsute, on a short glabrous stipes; style elongated, with a

terminal stigma; ovules 2.—Meissn. in DC. Prod. xiv. 341; *P. obcordata*, A. Cunn. Herb.

**N. S. Wales.** Barren rocky hills north of Bathurst and on the Cujeegong river, *A. Cunningham*. R. Brown describes the anthers as silky on the back, which I have not found to be the case in the flowers I examined. Meissner distinguishes two varieties with oval and obovate leaves, both however may be observed on the same specimens.

29. **P. sericea**, *A. Cunn.*; *R. Br. Prot. Nov. 14*. An erect shrub resembling at first sight some forms of *P. rigida*, but the indumentum softer; branches densely ferruginous-pubescent or villous. Leaves obovate oblong or oblanceolate, mucronate, but otherwise obtuse, contracted at the base but scarcely petiolate,  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. long, flat, pubescent on both sides and in the broader leaved forms densely silky, pinniveined. Flowers solitary in the axils but a few of the floral leaves sometimes much reduced. Pedicels villous, at first very short, 2 to 3 lines long when in fruit. Perianth pubescent, about 5 lines long, the segments obtuse, without points. Anther-connective not produced beyond the cells. Ovary densely villous, on a glabrous stipe; style elongated, villous; ovules 2.—Meissn. in DC. Prod. xiv. 342.

**N. S. Wales.** Liverpool plains and neighbouring ranges, *A. Cunningham*, Leichhardt, *C. Moore* (with the leaves nearly all obovate); barren country south-west of Laelian river, *A. Cunningham*; New England, *C. Stuart*; Clarence river, Beckler (all with the leaves mostly narrow).

The broad leaved more silky form, constituting Meissner's var.  $\beta$ , or *P. velutina*, A. Cunn. MS., appears to be the one that R. Brown had chiefly in view, the narrow-leaved specimens come very near to *P. Mitchellii*, and I should have kept up the two at least as distinct varieties, but that some of the latter have a few broadly obovate leaves on the principal stems, and some broad-leaved specimens have narrow leaves on the lateral branches. The specimens are none of them in very good flower.

30. **P. Mitchellii**, Meissn. in Hook. Kew Journ. vii. 73, and in DC. Prod. xiv. 342. An erect shrub with pubescent or villous branches. Leaves oblong-linear spatulate or rarely almost obovate, obtuse with a small point or acute, narrowed at the base, 1 to 2 in. long, pubescent when young, at length glabrous or nearly so. Pedicels 3 to 4 lines long, erect or recurved, axillary or forming terminal or subterminal racemes by the reduction of the floral leaves to small bracts. Perianth villous, 4 to 5 lines long, the segments without points. Anther-connective not produced beyond the cells. Ovary villous, on a glabrous stipe; style elongated; ovules 2.

**Queensland.** Burnett river, Haly; Brisbane river, Moreton Bay, *F. Mueller*. (I have not seen Mitchell's typical specimen from the interior.)

**N. S. Wales.** New England, *C. Stuart*.

I do not feel very confident in having properly distinguished this species from *P. sericea*. Possibly some of the narrow-leaved specimens which I have referred to the latter may belong rather to *P. Mitchellii*, or *P. Mitchellii* itself may be only a variety of *P. sericea*. The series of specimens is not complete enough to determine these points.

31. **P. fastigiata**, *R. Br. Prot. Nov. 13*. A shrub with rather slender branches shortly pubescent. Leaves rather crowded, incurved, narrow-linear, scarcely acute, attenuate at the base, the margins re-

curved or revolute,  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. long, more or less scabrous-pubescent. Pedicels slender, solitary or clustered in the axils (the floral leaves abortive), 1 to 2 lines long. Perianth minutely pubescent or hirsute, 3 to  $3\frac{1}{2}$  lines long. Anther-connective not produced beyond the cells. Ovary densely hirsute, on a glabrous stipes; style elongated; ovules 2.—Meissn. in DC. Prod. xiv. 337.

**N. S. Wales.** In the interior, *Fraser*; Robinson Ranges and Dogwood Creek, *Leichhardt*. Resembles sometimes *P. curvifolia*, but with smaller flowers and hirsute ovaries.

32. **P. hirsuta**, *Pers. Sgn.* i. 118. A spreading shrub of 2 or 3 ft., the whole plant pubescent or hirsute, or the foliage at length scabrous only or rarely nearly glabrous. Leaves sessile, broadly linear-lanceolate or oblong, obtuse or scarcely acute, with revolute margins, rarely above  $\frac{1}{2}$  in. long. Flowers sessile or on pedicels rarely exceeding 1 line, solitary in the axils but usually several crowded at or near the ends of the branches and sometimes the lower floral leaves abortive. Perianth densely hirsute with spreading hairs, about 5 lines long. Anther-connective not produced beyond the cells. Ovary densely hirsute on a glabrous stipes; style elongated; ovule solitary. Drupe obliquely ellipsoid,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long.—R. Br. in Trans. Linn. Soc. x. 161, Prod. 372, Prot. Nov. 13; Rudge in Trans. Linn. Soc. x. 291, t. 16; Meissn. in DC. Prod. xiv. 337; Lodd. Bot. Cab. t. 327.

**N. S. Wales.** Port Jackson to the Blue Mountains, *R. Brown*, *Sieber*, n. 56, and many others. However variable the leaves may be in breadth, they scarcely supply the means of distinguishing marked varieties as proposed by Meissner. In our specimens of Sieber's *P. arida*, Pl. Ixs, n. 55, they are not broader than in those of his n. 56, but rather scabrous than hirsute. In A. Cunningham's *P. aspera*, from between Hunter's and Richmond rivers, they are very scabrous, short, and rather broad; in R. Brown's typical specimens they are narrow and very hispid.

33. **P. chamæpitys**, *A. Cunn. in Field*, N. S. Wales, 329. A prostrate or divaricate shrub, quite glabrous or the young branches slightly pubescent. Leaves crowded, narrow-linear, acute and rigid but scarcely pungent-pointed, channelled underneath with revolute margins, not scabrous, mostly about  $\frac{1}{2}$  in. long. Flowers very shortly pedicellate, solitary within each floral leaf but crowded into short heads or clusters at or below the ends of the branches, with reduced floral leaves. Perianth 4 to 5 lines long, glabrous or sprinkled with a few appressed hairs. Anther-connective not produced beyond the cells. Ovary densely hirsute, on a glabrous stipes; style elongated; ovule solitary.—R. Br. Prot. Nov. 13; Meissn. in DC. Prod. xiv. 335; *P. gnidioides*, Sieb. in Spreng. Syst. Cur. Post. 45, and in Roem. und Schult. Syst. iii. Mant. 269.

**N. S. Wales.** Blue Mountains, *A. Cunningham*, *Sieber*, n. 53.

34. **P. arborea**, *F. Muell. Fragm.* v. 37, vi. 221. A tree of about 30 ft., the branches and sometimes the young shoots hoary-pubescent or ferruginous. Leaves oblong-lanceolate, obtuse or scarcely pointed, contracted into a petiole, glabrous above, minutely pubescent under-

neath, mostly 2 to 4 in. long, flat or the margins slightly recurved. Flowers solitary in the axils but the floral leaves sometimes reduced to small bracts or quite abortive at the base of the young shoots. Pedicels pubescent, 1 to 2 lines long. Perianth larger than in any species except *P. Gunnii*, 8 to 9 lines long, silky-pubescent, the segments with rather thick conical dorsal tips. Anther-connective not produced beyond the cells. Ovary stipitate, glabrous; style elongated; ovules 2.

**Victoria.** Moist shady woods on the upper Tyers, Tarwin, Latrobe, Tangil, and Yarra rivers, and in the beech woods of the Lower regions of the Baw-Baw Mountains, F. Mueller.

35. ***P. salicina***, Pers. *Syn.* i. 118. A tall shrub, the young branches minutely pubescent, the foliage glabrous. Leaves oblong-lanceolate, more or less oblique or falcate, obtuse or mucronate-acute, contracted into a short petiole, mostly 4 to 8 in. long, flat, not very thick, more or less distinctly 3-nerved and obliquely veined. Flowers at the base of the shoots axillary or below the leaves, the floral leaves mostly abortive or much reduced. Pedicels 2 to 4 lines long, glabrous or pubescent. Perianth glabrous or slightly pubescent, 5 to 6 lines long, the segments without terminal points. Anther-connective not produced beyond the cells. Ovary stipitate, glabrous; style elongated; ovules 2.—R. Br. in *Trans. Linn. Soc.* x. 163, Prod. 373; Meissn. in DC. Prod. xiv. 343.

**N. S. Wales.** Port Jackson, R. Brown, *Sieber*, n. 60, and many others; Hastings river, Beckler; Port Macquarie, Tozer.

Var.? *Muelleri*. Quite glabrous. Leaves broader, less falcate or straight, thicker, with nerve-like margins, and mostly 2 to 4 lines long. Pedicels shorter. Perianth not seen, the specimens all in fruit only.—Twofold Bay and Genoa river, F. Mueller.

36. ***P. prostrata***, R. Br. in *Trans. Linn. Soc.* x. 163, Prod. 373. A trailing prostrate or low and diffuse shrub, extending sometimes to 2 or 3 ft., glabrous or the young shoots slightly pubescent. Leaves broadly elliptical oblong or almost lanceolate, acute or mucronate, contracted into a very short petiole, 1 to 1½ in. long, not so rigid as in *P. cornifolia*, scarcely veined except the slightly prominent midrib. Pedicels short, axillary, solitary or clustered on reduced axillary shoots. Perianth glabrous, 4 to 5 lines long, the segments without terminal points. Anther-connective not produced beyond the cells. Ovary stipitate, glabrous; style elongated; ovules 2.—Meissn. in DC. Prod. xiv. 342; *P. daphnoides*, A. Cunn.; R. Br. Prot. Nov. 15; Meissn. in DC. Prod. xiv. 339.

**Queensland.** Sandy Cape, Hervey Bay, R. Brown.

**N. S. Wales.** Hunter's river, A. Cunningham; New England near Armidale and head of Macleay river, C. Stuart; Mount Mitchell, Beckler.

The specimens are several of them very unsatisfactory, but all described as prostrate. The foliage is nearly that of some short leaved specimens of *P. cornifolia*, but the ovary is glabrous; the leaves also resemble those of *P. revoluta*, but are flatter and green on both sides.

37. ***P. lanceolata***, Andr. *Bot. Rep.* t. 74. An erect shrub of several ft., the branches and young shoots hoary-pubescent, the adult foliage

glabrous or nearly so. Leaves lanceolate or oblong-lanceolate, mucronate-acute, much contracted into a short petiole, mostly  $1\frac{1}{2}$  to  $2\frac{1}{2}$  in. long, flat, the midrib slightly prominent, the margins scarcely nerve-like, otherwise veinless. Pedicels exceedingly short, solitary or 2 together, pubescent, rarely 1 line long. Perianth about 5 lines long, pubescent with very short appressed hairs, the segments without terminal points. Anther-connective not produced beyond the cells. Ovary glabrous, contracted into a short stipes; style elongated; ovules 2.—R. Br. in Trans. Linn. Soc. x. 162, Prod. 373; Meissn. in DC. Prod. xiv. 340; Lodd. Bot. Cab. t. 25; *P. ligustrina*, Knight, Prot. 100; *P. glaucescens*, Sieb. in Roem. and Schult. Syst. iii. Mant. 271.

**N. S. Wales.** Port Jackson, R. Brown, Sieber, n. 47 and 57, and many others: New England, C. Stuart.

Var. ? *laevis*. The whole plant glabrous. Leaves rather longer and thinner, broad or narrow. Pedicels not quite so short.—Clarence and Macleay rivers, Beckler; Port Jackson? (from garden specimens.)

To the above variety may probably be referred *Linkia laevis*, Cav. Ic. iv. 61, t. 389 (very badly figured and described), *P. latifolia*, Andr. Bot. Rep. t. 280, and perhaps also of Lodd. Bot. Cab. t. 1509. *P. attenuata*, R. Br. Prot. Nov. 16, Meissn. in DC. Prod. xiv. 342, from Moreton Bay, Fraser, is described from specimens in fruit only, and may be either a variety of *P. media* or this variety of *P. lanceolata*, which connects in some measure the two species as to foliage and length of pedicels, neglecting the hairiness of the ovary in *P. media*. The exact discrimination of *P. lanceolata* and several allied species is often very difficult.

38. **P. confertiflora**, Benth. An erect shrub of 1 to 3 ft., the branches and inflorescence slightly ferruginous-pubescent, otherwise glabrous. Leaves broadly lanceolate or ovate-elliptical, acute, contracted at the base into a very short petiole, 2 to 3 in. long, flat, the midrib prominent underneath, more or less distinctly veined, and sometimes 3-nerved. Flowers 6 to 10 together in short dense leafless axillary racemes or clusters, the rhachis at length growing out to 3 or 4 lines, ferruginous-pubescent as well as the very short pedicels, the racemes or clusters sometimes shortly pedunculate, with a pair of small bracts. Perianth about 5 lines long, villous with appressed ferruginous or silky hairs, the segments without terminal points. Anther-connective not produced beyond the cells. Ovary very shortly stipitate, quite glabrous; style elongated; ovules 2. Drupe small, ovoid.

**Victoria.** Scrubby declivities of the Stringy-bark ranges towards Gipps' Land, Mitta-Mitta and Genoa rivers, F. Mueller. These specimens were referred by F. Mueller and Meissner (in DC. Prod. xiv. 343) to *P. ferruginea*, which they resemble at first sight, but the ovary is perfectly glabrous, and the affinity appears to me to be much greater with *P. lanceolata*.

39. **P. lucida**, R. Br. in Trans. Linn. Soc. x. 161, Prod. 372. A tall shrub or small tree of 12 to 16 ft. with a lamellose bark, the young branches tomentose or shortly pubescent, the foliage glabrous. Leaves linear-lanceolate, mostly acute, shortly contracted at the base, 2 to 4 in. long, flat or with recurved margins, rather thin, obscurely and finely veined. Pedicels 1 to 2 lines long, more slender and less pubescent than in *P. lanceolata*, all axillary or forming racemes at the base of the

branches owing to the abortion or reduction of the lower floral leaves. Perianth slightly pubescent, 4 or 5 lines long, the segments with minute terminal points or without any. Anther-connective not produced beyond the cells. Ovary glabrous, on a very short stipe; style elongated; ovules 2.—Meissn. in DC. Prod. xiv. 339.

**N. S. Wales.** Nepean river, *Barr*; Port Jackson to the Blue Mountains, *Wool's*, *A. Cunningham*; Sydney woods, *Maccarthur*, *Paris Exhibition*, 1855, n. 150 and 225, from Port Jackson, and n. 11 from Illawarra.

Var.? *latifolia*. Leaves rather broader and thinner. Perianth rather longer, with more evident points to the segments.—Clarence river, *Beckler*.

40. **P. linearis**, Andr. Bot. Rep. t. 77. A tall shrub or small tree of 10 to 20 ft., the young branches pubescent or villous, the adult foliage usually glabrous. Leaves rather crowded, linear, acute or almost obtuse, contracted at the base, 1 to 2 in. long, 3 to 1½ lines broad, obscurely veined. Pedicels solitary, 1 to 3 lines long. Perianth about 5 lines long, more or less pubescent with short appressed hairs. Anther-connective not produced beyond the cells. Ovary glabrous, stipitate; style elongated; ovules 2. Drupe ovoid.—R. Br. in Trans. Linn. Soc. x. 161, Prod. 372; Meissn. in DC. Prod. xiv. 335; Vent. Jard. Malm. t. 32; Bot. Mag. t. 760; *P. angustifolia* Knight, Prot. 99; *P. pinifolia*, Sieb. Pl. Exs.; *P. filifolia*, Dietr.; Roem. and Schult. Syst. iii. 401; *P. pruinosa*, A. Cunn.; Steud. Nom. Bot. ed. 2? (the specimens not in flower); *Pentadactylon angustifolium*, Gaertn. f. Fr. iii. 219, t. 220; *Persoonia pentadactylon* Steud. Nom. Bot. ed. 2.

**Queensland.** Stradbroke island, *Fraser*.

**N. S. Wales.** Port Jackson to the Blue Mountains, *R. Brown*, *Siber*, n. 50, and many others; northward to Hastings and Macleay rivers, *Beckler*; southward to Illawarra, *Shephard*, *A. Cunningham*, *Maccarthur*, *Paris Exhibition*, n. 115, and Twofold Bay, *F. Mueller*.

**Victoria.** Genoa and Snowy rivers and Nangatta mountains, *F. Mueller*.

Var. *sericea*. Silky-pubescent at the time of flowering.—Shoalhaven river, *C. Moore*. The fruit of this species is said to be one of those most known under the name of "Geebung." The plant varies much in the breadth of the leaves. R. Brown describes the bark as smooth, and the leaves of his specimens are all very narrow; F. Mueller and others have sent with their specimens, mostly with broader leaves, a lamellose bark like that of *P. lucida*. The real distinction between the two species requires therefore further elucidation from the observation of living specimens.

In referring Gériner's *Pentadactylon* to this species, I have been guided by a specimen in the Banksian Herbarium named *Persoonia angustifolia* in the same handwriting as the name of *Persoonia ferruginea*, there given to a specimen of the latter plant from the same collection (Mr. Barton), which was evidently the one which Gériner also described under the latter name. The lobed embryo he figures has also been observed by F. Mueller in *P. chamaepaeum*.

41. **P. pinifolia**, R. Br. in Trans. Linn. Soc. x. 160, Prod. 372. A shrub attaining 8 to 10 ft., with virgate branches "often pendulous," pubescent as well as the young leaves, the adult foliage glabrous. Leaves crowded, erect or incurved, linear-filiform, acute, with recurved margins, channelled underneath, 1 to 2 in. long, the floral ones not exceeding the flowers but otherwise similar. Flowers on very short pedicels or almost sessile, solitary within the floral leaves but owing to their reduced size

forming a dense terminal raceme of 2 or 3 in. or even twice that length. Perianth slightly silky-pubescent, 4 to 5 lines long, the segments rather obtuse. Anther-connective not produced beyond the cells. Ovary glabrous, stipitate; style elongated; ovule solitary. Fruit ovoid, scarcely oblique, about  $\frac{1}{2}$  in. long.—Rudge in Trans. Linn. Soc. x. 290, t. 16; Meissn. in DC. Prod. xiv. 334.

**N. S. Wales.** Port Jackson to the Blue Mountains, *R. Brown*, and many others. Sydney woods, Paris Exhibition, 1855, *M'Arthur*, n. 216.

**42. P. Caleyi**, *R. Br. Prot. Nov.* 13. A shrub of several ft., the branches tomentose-pubescent. Leaves narrow-linear, acute or almost obtuse, 1 to 2 in. long, with slightly recurved margins, veinless, glabrous above, pale and often minutely pubescent underneath. Flowers axillary, solitary (or rarely 2 together?), sessile or on exceedingly short pedicels. Perianth slender, slightly tomentose or nearly glabrous, about 5 lines long, the segments tipped with fine points. Anther-connective not produced beyond the cells. Ovary glabrous, on a short slender stipe.—Meissn. in DC. Prod. xiv. 335.

**N. S. Wales.** Jarvis Bay, *Caley*.

**Victoria?** Wilson's Promontory, *Barker*, but possibly some mistake in this station.

I have seen this plant only in R. Brown's herbarium, where there are several good specimens. It is evidently allied to *P. ledifolia* and *P. revoluta*, but with the very narrow leaves of *P. linearis*, and distinguished from all three by the long points of the perianth-segments.

**43. P. ledifolia**, *A. Cunningham*; *Meissn.* in DC. Prod. xiv. 339. A tall erect bushy shrub, the branches shortly ferruginous-villous. Leaves oblong-linear or nearly lanceolate, obtuse, very shortly contracted at the base, 1 to 2 in. long, the margins recurved, glabrous and smooth above, pale or hoary and often minutely pubescent underneath. Pedicels axillary, exceedingly short, villous. Perianth about 5 lines long, slightly villous, with spreading hairs, the segments without terminal points. Anther-connective not produced beyond the cells. Ovary glabrous, on a very short stipe; style elongated; ovules 2. Drupe obliquely ovoid.

**N. S. Wales.** Illawarra, *A. Cunningham*, *Shepherd*.

**44. P. revoluta**, *Sieb.* in *Roem.* and *Schult.* *Syst.* iii. *Mant.* 272. An erect or spreading shrub of 2 to 4 ft., the young shoots silky, the adult foliage glabrous or nearly so. Leaves in the typical form obovate-oblong to oblong-lanceolate, very obtuse, shortly contracted at the base, but not distinctly petiolate,  $\frac{3}{4}$  to 1 in. long, with recurved or revolute margins, coriaceous, glabrous and smooth above, pale or white and long retaining a slight pubescence underneath. Flowers solitary, erect on very short pedicels. Perianth silky-pubescent, about 5 lines long, the segments tipped with short points. Ovary glabrous, stipitate; style elongated; ovules 2.—*R. Br. Prot. Nov.* 14; *Meissn.* in DC. Prod. xiv. 339.

**N. S. Wales.** Blue Mountains, *Sieber*, n. 48, *A. Cunningham*, *Woolss*, *Miss Atkinson*; Berrima, *M'Arthur*.

Var. *angustifolia*. Leaves mostly oblong linear.—Blue Mountains, *Miss Atkinson*; Argyle County, *M'Arthur*.



Personinia Calleyi R. Br.

F. Müller det.





This species as well as the *P. prostrata* was designated by A. Cunningham by the name of *P. daphnoides*.

45. **P. Gunnii**, *Hook. f. in Hook. Lond. Journ.* vi. 283, *Fl. Tasmaniae*, i. 321. An erect bushy shrub of 6 to 10 ft., the branches and young shoots more or less hoary or silky-tomentose. Leaves rather crowded, cuneate-oblong oblong-linear or linear-spathulata,  $\frac{3}{4}$  to 1½ in. long, obtuse, flat, thick, nerveless, contracted into a short petiole, quite glabrous in the typical form. Flowers larger than in any species except *P. arborea*, on short thick tomentose pedicels, all solitary in the axils, but sometimes clustered towards the ends of the branches. Perianth hoary-pubescent or nearly glabrous, 8 to 9 lines long. Anther-connective not produced beyond the cells. Ovary stipitate, glabrous, style elongated; ovules 2.—Meissn. in DC. Prod. xiv. 340.

**Tasmania.** Mountain regions, Lake St. Clair, May Day Plains, *Gunn*; Port Davey, *Milligan*; Mount Lapeyrouse, *C. Stuart*.

Var. *angustifolia*. More silky; leaves narrower and longer; perianth more pubescent.—Macquarie Harbour, *Milligan*. Some of the Mount Lapeyrouse specimens closely connect the two extreme forms.

46. **P. mollis**, *R. Br. in Trans. Linn. Soc.* x. 161, *Prod.* 372. A tall erect shrub or small tree, the young branches ferruginous-villous. Leaves lanceolate or linear-lanceolate, acute, shortly contracted at the base, mostly 1½ to 2½ in. long, the margins recurved, glabrous above when young and more or less veined, paler pubescent and veinless underneath or rarely when old quite glabrous. Flowers sessile or on very short villous pedicels, the floral leaves sometimes almost opposite, or in whorls of 3. Perianth densely villous, 5 to 6 lines long or even rather longer. Anther-connective not produced beyond the cells. Ovary stipitate, glabrous; style elongated; ovules 2, but one of them often abortive at a very early stage. Drupe small, oblique.—Meissn. in DC. Prod. xiv. 339.

**N. S. Wales.** Blue Mountains, *R. Brown*, *Sieber*, n. 54, 1, and *R. Cunningham*, *Miss Atkinson*. In some herbaria specimens of *P. hirsuta* are designated by A. Cunningham under the name of *P. mollis*.

47. **P. rigida**, *R. Br. Prot.* Nov. 14. A bushy shrub of 3 or 4 ft., the branches softly tomentose-villous and often ferruginous. Leaves from obovate to linear-spathulata, mucronate, much contracted at the base but scarcely petiolate,  $\frac{3}{4}$  to 1½ in. long, the margins usually recurved or replicate, softly or seaceous-pubescent at least when young, and more so and the midrib more conspicuous on the upper than on the under surface, the old leaves rarely glabrous. Flowers almost sessile and solitary in the axils, but sometimes several crowded at the base of axillary shoots with one or two of the floral leaves reduced to small bracts. Perianth densely villous, 5 to nearly 6 lines long. Anther-connective not produced beyond the cells. Ovary stipitate, glabrous; style elongated; ovules 2. Fruit broad, about ½ in. long.—Meissn. in DC. Prod. xiv. 337; *P. spathulata*, Sieb. in Roem. and Schult. *Syst.* iii.

271, and probably also Lodd. Bot. Cab. t. 1199, and therefore of Meissn. in DC. l.c. 338 partly, but not of R. Br.

**N. S. Wales.** Blue Mountains, *Caley*, *A. Cunningham*; Macquarie and Lachlan rivers, *A. Cunningham*.

**Victoria.** Buffalo range, Mount Alexander, Forest Creek, Broken and King rivers, *F. Mueller*.

Var.? *microphylla*. The whole plant very scabrous. Leaves broadly spatulate, about  $\frac{1}{2}$  in. long including the long winged petiole. Perianth slightly scabrous or hispid. -Blue Mountains, *Caley*; Castlereagh, *C. Moore*; also in Leichhardt's collection.

The species has sometimes some resemblance to some varieties of *P. sericea*, but readily distinguished by the glabrous ovary.

48. **P. curvifolia**, *R. Br. Prot. Nov. 13.* A shrub of 1 to 3 ft., the branches softly pubescent. Leaves rather crowded, usually incurved, narrow-linear with revolute margins so as to be almost terete with a deep groove underneath, acute, very scabrous,  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. long. Flowers solitary in the axils on very short pedicels or almost sessile, crowded at or near the ends of the branches and a few of the floral leaves very small or abortive, forming a very short terminal or subterminal raceme or spike. Perianth 5 or 6 lines long, slightly pubescent. Anther-connective not produced beyond the cells. Ovary glabrous, stipitate; style elongated; ovules 2.—Meissn. in DC. Prod. xiv. 337; *P. abietina*, *A. Cunn.*; Meissn. l.c. 336.

**N. S. Wales.** Harvey's range, west of Wellington valley, *A. Cunningham*; St. George's range, *Fraser*; Castlereagh river, *C. Moore*. Resembles some specimens of *P. fastigiata*, under which name it also occurs in A. Cunningham's collections, but is readily distinguished by the glabrous ovary.

49. **P. oblongata**, *A. Cunn.*; *R. Br. Prot. Nov. 14.* Glabrous or the branches very slightly pubescent. Leaves ovate-lanceolate or lanceolate, mucronate-acute, rounded or contracted at the base, nearly sessile, mostly about  $1\frac{1}{2}$  in. long, flat, not thick, scarcely veined besides the midrib. Pedicels axillary, slender, recurved,  $\frac{1}{4}$  to  $\frac{1}{2}$  in. long or even longer, usually glabrous. Perianth about 5 lines long, much constricted above the base, glabrous, the segments without subulate points. Ovary stipitate, quite glabrous or rarely sprinkled with very few hairs. —Meissn. in DC. Prod. xiv. 341; *P. planifolia*, *A. Cunn. Herb.*

**N. S. Wales.** Towards Hunter's river, *A. Cunningham*; Blue Mountains, *Woolss.*

50. **P. Cunninghamii**, *R. Br. Prot. Nov. 15.* An erect or spreading low shrub, closely allied to *P. myrtilloides* and perhaps a variety, the branches sparingly pubescent or hirsute. Leaves numerous, ovate, mucronate-acute,  $\frac{1}{2}$  to 1 in. long, the larger ones often very broad, coriaceous, flat, 1-nerved. Pedicels all axillary, glabrous, slender, 2 to 4 lines long. Perianth 4 to 5 lines long, glabrous, the segments tipped with long dorsal subulate points. Anther-connective not produced beyond the cells. Ovary stipitate, glabrous; style elongated; ovules 2.—Meissn. in DC. Prod. xiv. 342.

**N. S. Wales.** Country north of Cujeegong river, *A. Cunningham*; sandy ridges, Liverpool plains, *C. Moore*. A specimen without flowers from Mudgee, *Woolss*, may possibly belong also to this species.





51. **P. myrtilloides**, Sieb. in Roem. and Schult. Syst. iii. Mant. 272. A much-branched spreading shrub of 4 ft. (*Fraser*), the branches and sometimes the young shoots pubescent, the adult foliage glabrous or nearly so. Leaves in the typical form oblong-lanceolate, mucronate, contracted at the base and sometimes shortly petiolate,  $\frac{3}{4}$  to above 1 in. long, rigid, the nerve-like margin slightly recurved, the midrib scarcely prominent, otherwise flat and veinless. Pedicels axillary, pubescent, spreading, 1 to 2 lines long. Perianth 4 to 5 lines long, pubescent, the segments tipped with dorsal horn-like points. Anther-connective not produced beyond the cells. Ovary stipitate, glabrous; style elongated; ovules 2.—R. Br. Prot. Nov. 14; Meissn. in DC. Prod. xiv. 339; *P. oleifolia*, A. Cunn. Herb.

**N. S. Wales.** Blue Mountains, A. Cunningham, Fraser, Sieber, n. 52, and others.

Var. *brevifolia*. Leaves  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long, varying from lanceolate to almost ovate, the floral ones sometimes reduced to small bracts. Pedicels pubescent. Perianth not seen.

**Victoria.** Upper Gippsland river and Nangatta mountains up to 4000 ft. elevation, F. Mueller, the specimens all in fruit only.

52. **P. oxyccocoides**, Sieb. in Spreng. Syst. Cvr. Post 45, and in Roem. and Schult. Syst. iii. Mant. 270. A much-branched shrub, sometimes low and bushy or even procumbent, sometimes said to be very tall, more or less scabrous-pubescent or quite glabrous. Leaves very shortly petiolate, orbicular ovate elliptical or oblong-lanceolate, obtuse, rigid, with recurved margins, veinless except the midrib, 2 to 3 lines long when broad, twice that length when narrow. Pedicels axillary, spreading, 1 to 2 lines long. Perianth glabrous, about 4 lines long, the segments without terminal points. Anther-connective not produced beyond the cells. Ovary stipitate, glabrous; style elongated; ovule solitary in all the ovaries opened.—R. Br. Prot. Nov. 15; Meissn. in DC. Prod. xiv. 338; *P. thymifolia*, A. Cunn.; R. Br. l.c.; Meissn. l.c.; *P. microphylla*, R. Br. l.c.; Meissn. l.c.

**N. S. Wales.** Blue Mountains, A. Cunningham, Sieber, n. 49, Woolls; Argyle County, A. Cunningham; Berrima, M'Arthur; southern districts, C. Moore; Shoalhaven, Rietmann.

The majority of the numerous specimens I have seen are in fruit only, and in that state the three supposed species do not appear to me to be distinguishable even as marked varieties, notwithstanding the great differences in the size and shape of the leaves. Some very imperfect specimens from Darling Downs, Lau, may possibly belong to the same species.

Var.? *longijolia*. "A small tree." Leaves lanceolate, acute, about 1 in. long.—New England, C. Stuart, and perhaps the same from the Blue Mountains in Herb. F. Mueller, where both are referred to *P. oxyccocoides*. This determination is, however, very doubtful, and there are no flowers on either specimen.

53. **P. nutans**, R. Br. in Trans. Linn. Soc. x. 162, Prod. 373. An erect glabrous shrub, usually low and bushy with numerous slender branches, the young shoots rarely minutely hoary-pubescent. Leaves narrow-linear, acute, contracted at the base,  $\frac{3}{4}$  to above 1 in. long, flat or the margins slightly recurved, the midrib prominent underneath. Pedicels axillary, solitary or rarely 2 together, filiform, 3 to 5 lines

long, very spreading or at length reflexed. Perianth glabrous, about 4 lines long, the segments tipped with fine points usually short. Anther-connective not produced beyond the cells. Ovary on a rather long stipe, glabrous; style elongated, often but not always very flexuous at the base; ovules 2.—Meissn. in DC. Prod. xiv. 335, *P. linearis*, Sieb. Pl. Exs.; *P. flexifolia*, Lodd. Bot. Cab. t. 922, and consequently Meissn. in DC. Prod. xiv. 337 in part, not of R. Br.

**N. S. Wales.** Port Jackson to the Blue Mountains, *R. Brown*, *Sieber*, n. 46, and *Fl. Mixt.* n. 472, and many others.

Var. *apiculata*. Perianth rather longer, the points of the segments long and fine. — *P. apiculata*, Meissn. in Hook. Kew Journ. vii. 73, and in DC. Prod. xiv. 335.—Liverpool road near Sydney, with the typical form, *A. Cunningham*. The bending of the style above the ovary and the greater or less prominence of the tips of the segments are both very variable in the numerous specimens before me of *P. nutans*.

54. ? **P. angulata**, *R. Br.* Prot. Nov. 14. An erect shrub, glabrous or nearly so. Leaves crowded, oblong-linear or linear-lanceolate, acute or with a short callous point, contracted at the base, 1 to 1½ in. long, thick, nerveless, concave. Pedicels solitary, about 1 line long. Flowers and fruit unknown.—Meissn. in DC. Prod. xiv. 339.

**N. S. Wales.** Blue Mountains, *A. Cunningham*. Evidently distinct from all other species, and most probably a *Persoonia*, but it must remain doubtful till flowering specimens have been examined.

55. **P. virgata**, *R. Br.* in Trans. Linn. Soc. x. 161, Prod. 372. A large shrub, with numerous slender branches more or less pubescent, the adult foliage glabrous or nearly so. Leaves narrow-linear, acuminate, contracted at the base, 1 to 1½ in. long, flat concave or grooved above, convex underneath without any prominent midrib. Pedicels slender, glabrous or minutely pubescent, about ¼ in. long. Perianth glabrous, 4 to 4½ lines long, the segments tipped with minute points. Anther-connective not produced beyond the cells. Ovary glabrous, on a rather short and thick stipe; style elongated; ovules 2.—Meissn. in DC. Prod. xiv. 338; *P. linariifolia*, A. Cunn. Herb.; *P. tenuifolia*, Meissn. l.c. 334, not of R. Br.

**Queensland.** Sandy Cape, Hervey Bay, *R. Brown*; sandy shores of Stradbroke Island, *A. Cunningham*, *Fraser*; Moreton Island, *M'Gillivray*, *F. Mueller*; Pine river, *Fitzalan*.

**N. S. Wales.** Cape Byron, *C. Moore*.

This species resembles in some respects *P. nutans*, but the flowers are more erect and the leaves grooved on the upper and not on the under side, the margins rather incurved than recurved.

56. **P. chamæpeuce**, *Lhotsky*; *Meissn.* in DC. Prod. xiv. 336. A low decumbent or erect shrub, quite glabrous or the young shoots sparingly pubescent. Leaves spreading, linear, acute but not pungent, contracted at the base, rigid, flat or slightly concave, without any prominent midrib, ½ to 1 in. long. Pedicels axillary, solitary, rarely above 2 lines long. Perianth glabrous, acuminate, about 5 lines long. Anther-connective not produced beyond the cells. Ovary stipitate, glabrous; style elongated; ovules solitary in the ovaries examined.—

*P. suffruticosa*, F. Muell. 1st Gen. Rep. 17; *P. Culeyi*, F. Muell. Pl. Vict. ii. t. 69, not of R. Br.

**N. S. Wales.** Barren rocky hills near Bathurst, *A. Cunningham*, Woolls.

**Victoria.** Hardinge and Buffalo ranges, mountains on Macalister river, between Loddon and Creswick Creeks, between Broken and Ovens rivers, *F. Mueller*.

57. **P. juniperina**, Labill. *Pl. Nov. Holl.* i. 33, t. 45. A bushy or variate shrub, sometimes low and spreading, more frequently 5 or 6 ft. high or even much taller, the young shoots silky-pubescent, the older foliage glabrous or nearly so. Leaves sessile, narrow-linear, rigid and pungent-pointed, flat or concave, the midrib prominent underneath but not always very distinct,  $\frac{1}{2}$  to 1 in. long. Flowers axillary, solitary, on very short pedicels. Perianth shortly silky-pubescent or nearly glabrous, about 4 lines long, the segments without subulate points. Anther-connective not produced beyond the cells. Ovary stipitate, glabrous; style elongated; ovules 2.—R. Br. in. *Trans. Linn. Soc.* x. 160, Prod. 372; Meissn. in *DC. Prod.* xiv. 336; Hook. f. *Fl. Tasm.* i. 321; *P. surrecta*, F. Muell. in *Adelaide Deutsch. Zeit.* 1851, (Meissn.)

**Victoria.** Port Phillip, *R. Brown*; from the Glendig, *Robertson*, and Melbourne, *Adamson*, to Genoa river, *F. Mueller*; Dandenong ranges and Grampians, *F. Mueller*; Wimmera, *Dallasby*.

**Tasmania**, *Labillardière*; Port Dalrymple, *R. Brown*; very common, ascending to 3200 ft., *J. D. Hooker*.

**S. Australia.** Mount Lofty range, *F. Mueller*; Tatiara country, Woods.

58. **P. tenuifolia**, *R. Br. Prot. Nov. 12, but not of Meissn.* A shrub with slender slightly pubescent branches. Leaves crowded, filiform, more or less spreading, acute but not pungent, nearly terete, grooved above, glabrous,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long. Pedicels axillary, rarely 1 line long. Perianth glabrous, 4 to 5 lines long, the segments without subulate points. Anther-connective not produced beyond the cells. Ovary stipitate, glabrous; style elongated; ovules 2. Fruit broad.

**Queensland.** Logan and Brisbane rivers, *Fraser*; Glasshouses and Moreton Bay *F. Mueller*.

**N. S. Wales.** New England, *C. Stuart*; Biroa, *Leichhardt*.

59. **P. acerosa**, Sieb. in *Roem. and Schult. Syst. iii. Mant.* 269. A shrub of 2 to 6 ft., with slender virgate branches, the whole plant quite glabrous or a few hairs on the young shoots, the specimens usually drying very black. Leaves crowded, more erect than in *P. tenuifolia*, filiform, acute but not pungent, nearly terete, grooved above,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long. Flowers axillary, on very short erect pedicels, scattered or forming a long leafy raceme. Perianth glabrous, 4 to 5 lines long, the segments tipped with long subulate points. Anther-connective not produced beyond the cells. Ovary stipitate, glabrous; style elongated; ovules solitary in all the ovaries examined. Fruit ovoid.—R. Br. Prot. Nov. 13; Meissn. in *DC. Prod.* xiv. 335; *P. pallida*, Grah. in *Edinb. New Phil. Journ.* 1828-9, 177; Meissn. l.c. 334.

**N. S. Wales.** Blue Mountains, *Nieber*, n. 59, *Fraser*, *Backhouse*, *Miss Atkinson*, Woolls; Illawarra, *Shepherd*. I find this species as well as *P. curvifolia* sometimes designated as *P. abietina*, A. Cunn.

SUBORDER 2. FOLLICULARES.—Fruit dehiscent, follicular or 2-valved or rarely drupaceous and indehiscent. Flowers usually in pairs, with a single bract to each pair, or rarely the inflorescence anomalous. Ovules 2 or more, collateral in each pair.

TRIBE 5. GREVILLEÆ.—Ovules 2 or 4, all collateral. Seeds without any intervening substances or separated only by a thin lamina or mealy substance. Flowers in racemes or rarely in umbels or clusters, with deciduous or abortive bracts or rarely surrounded by an involucre of imbricate bracts.

### 13. HELICIA, Lour.

Flowers hermaphrodite. Perianth regular, the tube slender, the laminae small, the segments all much revolute when separating. Anthers on short filaments inserted a little below the laminae, the connective produced into a short appendage. Hypogynous glands equal, distinct or united in a ring or cup round the ovary. Ovary sessile, with a long straight style, slightly thickened at the end with a terminal stigma; ovules 2, ascending, laterally attached near the base. Fruit hard, nearly globular, indehiscent (without any fleshy exocarp?). Seeds either solitary and globular or two together and hemispherical; testa veined or rugose; cotyledons thick and fleshy.—Trees or tall shrubs. Leaves alternate, entire or toothed. Flowers pedicellate in pairs, in terminal or axillary simple racemes, the pedicels of each pair often more or less connate. Bracts very deciduous (or sometimes none?).

The genus is spread over tropical Asia extending northwards to Japan. The Australian species appear to be all endemic, although one of them closely resembles one of the most widely dispersed of the Asiatic ones. The young fruits I have seen appear to be fleshy externally, the few ripe ones are detached, woody and smooth, but the exocarp may be deciduous as in *Macadamia ternifolia*.

Leaves mostly entire. Flowers glabrous.

- Perianth 7 to 8 lines long. Hypogynous glands oblong or obovoid, quite distinct . . . . . 1. *H. præalta*.
- Perianth slender, about  $\frac{1}{2}$  in. long. Hypogynous glands broad, truncate but distinct . . . . . 2. *H. australasica*.
- Perianth slender, about 4 lines long. Hypogynous glands more or less connate in a truncate ring or cup . . . . . 3. *H. glabriflora*.
- Leaves mostly serrate. Perianth small, densely ferruginous-villous as well as the whole inflorescence. . . . . 4. *H. ferruginea*.

1. ***H. præalta*, F. Muell. *Fragn.* iii. 37.** A moderate sized or sometimes lofty tree attaining 100 ft., glabrous except the inflorescence which is often minutely tomentose. Leaves lanceolate, usually narrow, obtuse or acuminate, contracted into a petiole, quite entire in all the specimens seen, only 3 or 4 in. long in a few specimens, mostly 6 to 10 in. in others, coriaceous, often shining, pinniveined and reticulate, the veins fine. Racemes axillary or lateral, 3 to 6 in. long, the rhachis rigid. Pedicels 2 to 3 lines long, united to above the middle. Perianth 7 to 8 lines long. Hypogynous glands quite distinct and narrow. Ovary





glabrous. Fruit smooth and hard, above 1 in. diameter, but not seen quite ripe. Seed (nearly full-grown) with a deeply rugose testa.

**Queensland.** Scrubs near Brisbane, *W. Hill.*

**N. S. Wales.** Clarence river, *Beckler, C. Moore*; Richmond river, *C. Moore.*

**2. *H. australasica*,** *F. Muell.* in *Hook. Kew Journ.* ix. 27. A small tree, quite glabrous. Leaves oval-elliptical, obtuse or scarcely acuminate, entire or irregularly toothed, contracted into a very short petiole, glabrous and veined on both sides, 4 to 8 in. long. Racemes axillary or lateral, shorter than the leaves or rarely exceeding the shorter upper ones, quite glabrous. Flowers in pairs on an exceedingly short common pedicel so as to appear almost sessile on the rhachis. Perianth slender, glabrous, about  $\frac{1}{2}$  in. long. Hypogynous glands broad and truncate so as apparently to form a ring or cup, but really free. Ovary villous. Fruit not seen.

**N. Australia.** Towards Macaliam range, *F. Mueller*; Port Darwin, *Schultz.* The species is very nearly allied to the common Asiatic *H. robusta*.

**3. *H. glabriflora*,** *F. Muell. Fragm.* ii. 91. A small tree quite glabrous. Leaves ovate-elliptical, obtuse or obtusely acuminate, entire or very rarely toothed, contracted into a short petiole, 2 to 3 in. long, coriaceous with the veins less conspicuous than in *H. australasica*. Racemes terminal axillary or lateral, very slender, glabrous, about as long as the leaves, the rhachis almost filiform. Pedicels free or shortly united at the base,  $\frac{1}{2}$  to 1 line long. Perianth very slender, glabrous, about 4 lines long. Hypogynous glands more or less connate in a truncate ring or cup. Fruit only seen young.—*H. conjunctiflora*, *F. Muell. Fragm.* v. 38.

**N. S. Wales.** Camden Haven, *C. Moore*; Leycester Creek, Richmond river, *Beckler.*

**4. *H. ferruginea*,** *F. Muell. Fragm.* iii. 37. A moderate-sized tree, the branches and inflorescence densely villous with ferruginous or fulvous hairs, which often persist on the principal veins of the underside of the leaves. Leaves shortly petiolate, ovate-elliptical or oblong, acuminate, serrate, contracted or rounded at the base, 3 to 4 in. long in some specimens, twice that size in others, the veins very prominent underneath, the primary ones sometimes numerous and regular, in others fewer and more unequal, the minor reticulations also very variable. Racemes terminal or axillary, rather dense, shorter than the leaves. Flowers small, in pairs on a very short common pedicel. Perianth slender, densely rufous-villous,  $2\frac{1}{2}$  to 3 lines long. Hypogynous glands short and broad, irregular, 2 of them sometimes united. Fruit not seen ripe.

**Queensland.** Rockingham Bay, *Dallachy.*

**N. S. Wales.** Tweed, Richmond and Clarence rivers, *C. Moore.*

## 14. MACADAMIA, F. Muell.

Flowers hermaphrodite. Perianth regular or slightly irregular, the tube opening earlier on the under side and the segments, at least the lower ones, less revolute than in *Helicia*. Anthers on short filaments, inserted a little below the laminae, the connective produced into a gland or very short appendage. Hypogynous glands equal, distinct or united in a ring or cup round the ovary. Ovary sessile, with a long straight style, ovoid or clavate at the end, with a small terminal stigma; ovules 2, descending, laterally attached at or near the top. Fruit globular, indehiscent, with a hard thick putamen and rather thin fleshy exocarp. Seeds either solitary and globular or 2 and hemispherical; testa membranous; cotyledons thick and fleshy.—Trees or tall shrubs. Leaves verticillate, entire or serrate. Flowers pedicellate in pairs, in terminal or axillary simple racemes, the pedicels not connate. Bracts very deciduous.

The genus is endemic in Australia. It is, as observed by F. Mueller, closely allied to *Helicia*, but the verticillate leaves, constantly free pedicels, slightly oblique flowers, descending ovules and more drupaceous fruits, may justify the retaining it as distinct.

Perianths about 8 lines long, in short dense racemes. Hypogynous glands ovoid, distinct . . . . .	1. <i>M. Youngiana</i> .
Perianths 2 to 3 lines long, in slender racemes. Hypogynous glands broad, truncate, united in a cup or ring.	
Leaves in whorls of 3 or 4. Racemes long . . . . .	2. <i>M. ternifolia</i> .
Leaves in whorls of 5 to 7. Racemes much shorter than the leaves . . . . .	3. <i>M. verticillata</i> .

1. ***M. Youngiana*, F. Muell.** A shrub of 8 to 10 ft., the young branches and inflorescence ferruginous-pubescent. Leaves shortly petiolate, in whorls of 3 or 4, oblong-elliptical, acute or acuminate, entire or with a few small teeth, rounded or contracted at the base, 2 to 4 in. long, glabrous above, silky underneath when young. Racemes terminal, rather dense, shorter than the leaves. Pedicels ferruginous-pubescent, rarely above 2 lines long. Perianth pubescent, about 8 lines long, the three lower segments remaining longer coherent and less revolute than the upper one. Anther-connectives produced into a short obtuse appendage. Hypogynous glands oblong, quite distinct. Ovary villous; style-end ovoid.—*Helicia Youngiana*, F. Muell. *Fragm. iv.* 84.

***N. S. Wales*.** Head of the Clarence river, C. Moore; Richmond river, C. Moore, Farcett, Henderson.

2. ***M. ternifolia*, F. Muell.** in *Trans. Phil. Inst. Vict.* ii. 72, with a plate. A small tree with a very dense foliage, glabrous or the young branches and inflorescence minutely pubescent. Leaves sessile or nearly so, in whorls of 3 or 4, oblong or lanceolate, acute, serrate with fine or prickly teeth, glabrous and shining, from a few in. to above 1 ft. long. Racemes often as long as the leaves, with numerous small flowers, the pairs often clustered or almost verticillate. Pedicels at first very









short and not above 2 lines when in fruit. Perianth minutely pubescent or glabrous, nearly 3 lines long. Hypogynous glands united in a ring. Ovary villous; style-end clavate. Fruit with a 2-valved fleshy exocarp; the putamen globular, smooth and shining, thick and woody, often above 1 in. diameter.—*Helicia ternifolia*, F. Muell. Fragm. ii. 91, vi. 191.

**Queensland.** Pine river and Moreton Bay, W. Hill; Dawson and Burnett rivers, Leichhardt (with the leaves less toothed and the flowers rather larger).

**N. S. Wales.** Clarence and Richmond rivers, C. Moore (leaves rather small).

**S. M. verticillata**, F. Muell. Young shoots and inflorescence slightly hoary or rusty-tomentose. Leaves in whorls of 5 or 6, oblong-lanceolate, obtuse with a small callous point or almost acute, coarsely toothed, contracted into a very short petiole, 3 to 5 in. long, coriaceous, much reticulate. Racemes much shorter than the leaves, with numerous small crowded flowers. Bracts on the very young spikes broad, villous, falling off long before the flowers expand. Pedicels filiform, scarcely 2 lines long, hirsute. Perianth glabrous, about 1½ lines long. Hypogynous glands united in a ring or cup. Ovary densely villous; style-end clavate.—*Helicia verticillata*, F. Muell. Fragm. vi. 191.

**Queensland or N. S. Wales**, Leichhardt, the precise station not given (Herb. F. Mueller).

### 15. XYLOMELUM, Sm.

Flowers partially polygamous. Perianth regular, nearly cylindrical in the bud, the segments revolute, dilated at the end into short concave laminae. Anthers apparently perfect in all the flowers, on short filaments inserted a little below the laminae, the connective produced beyond the cells in a short obtuse or gland-like appendage. Hypogynous glands 4, small. Ovary in the fertile flowers shortly stipitate or almost sessile, tapering into a filiform style clavate at the end, with a terminal stigma either small and scarcely prominent or large thick and pulvinate; ovules 2 laterally attached below the middle; in the sterile flowers the ovary is abortive, but the style is clavate at the end though without any stigmatic surface. Fruit large, ovoid or tapering above the middle, very thick and woody, tardily opening along the upper side or in 2 valves. Seed flat, obliquely ovate, with a long terminal oblique or falcate wing.—Trees or tall shrubs. Leaves opposite, entire or prickly-toothed. Flowers in opposite dense spikes, axillary or at first forming a terminal cluster, becoming lateral by the elongation of the branch. Bracts small, at first imbricate, but falling off long before the flowering. Flowers sessile in pairs within each bract, the lower ones of the spike usually perfect, the upper ones with abortive ovaries.

The genus is endemic in Australia, where it is widely spread, the fruits generally known under the name of *wooden pears*.

Leaves veined, those at least of the barren branches prickly-toothed. Perianths ferruginous-villous, 5 to 6 lines long.

Leaves of the flowering branches usually entire. Eastern species . . . . . 1. *X. pyriforme*.

- Leaves of the flowering branches usually prickly-toothed.  
 Western species . . . . .  
 Leaves all quite entire. Perianth silky, under 4 lines long.  
 Leaves lanceolate, often falcate, veined. Fruits nearly glabrous,  
 narrow. Eastern species . . . . .  
 Leaves linear or linear-lanceolate, thick and veinless. Fruits  
 closely tomentose. Western species . . . . .

2. *X. occidentale*.  
 3. *X. salicinum*.  
 4. *X. angustifolium*.

**1. *X. pyriforme***, Knight, Prot. 105. A tree of moderate size, the young shoots ferruginous-villous or tomentose but soon becoming glabrous, the spikes remaining densely tomentose-villous. Leaves of the flowering branches usually entire, lanceolate or ovate-lanceolate, very acute, 4 to 6 in. long and tapering into a rather long petiole, those of flowerless branches or of younger plants often sinuate and prickly-toothed and attaining 8 in. with short petioles, all at length coriaceous and shining. Spikes very dense, 2 to 3 in. long, usually clustered 3 to 6 together and at first appearing terminal, but soon lateral by the growing out of the shoots. Bracts woolly-villous, orbicular, 1½ to 2 lines diameter. Perianth about 5 lines long. Style-end clavate, but smaller and shorter than in *X. occidentale*. Fruit 2½ to 3 in. long and above 1 in. diameter near the base, somewhat tapering above the middle.—R. Br. in Trans. Linn. Soc. x. 189, Prod. 387, Prot. Nov. 31; Meissn. in DC. Prod. xiv. 422; Endl. Iconogr. t. 47, 48; Reichb. Ic. Exot. t. 90; Banksia *pyriformis*, Gaertn. Fr. i. 220, t. 47; Sm. in White, Voy. 224, t. 21; Hakea *pyriformis*, Cav. Anal. Hist. Nat. i. 217, Ic. vi. 25, t. 536; Conchium *pyriforme*, Willd. Enum. Hort. Berol. 141.

**N. S. Wales.** Port Jackson, R. Brown, Sieber, n. 53, and many others.

**2. *X. occidentale***, R. Br. Prot. Nov. 31. An irregular shrub or tree of 12 to 25 ft., the young shoots and inflorescence densely ferruginous or hoary-tomentose, the older leaves glabrous. Leaves petiolate, ovate elliptical or oblong, irregularly marked by a few coarse undulate prickly teeth, 3 to 5 in. long. Spikes in the upper axils, 3 to 5 in. long, flowering from the base and forming a large terminal densely branched panicle with the floral leaves much reduced, or sometimes the leafy branch growing out leaving a few pairs of spikes at the base. Bracts very broad, concave, truncate, 1 to 2 lines diameter, very deciduous. Perianth 5 to 6 lines long, softly tomentose-villous as well as the bracts and rhachis. Anther-connectives produced into an oblong appendage. Ovary very densely villous. Style-end clavate. Fruit 2 to 3 in. long and about 1 in. diameter near the base, somewhat tapering above the middle, but very obtuse.—Meissn. in Pl. Preiss. i. 580, and in DC. Prod. xiv. 423; Hook. Ic. Pl. t. 446.

**W. Australia.** King George's Sound, McLean: Geographic Bay, Fraser; Swan river, Drummond, 1st coll. n. 616, Priss. n. 754; Vasse river, Oldfield. I have great doubts whether this species be sufficiently distinct from *X. pyriforme*.

**3. *X. salicinum***, A. Cunn. in R. Br. Prot. Nov. 31. A small tree, glabrous except the inflorescence or the young shoots minutely hoary-pubescent. Leaves lanceolate, broad or narrow, obtuse, falcate, entire, contracted into a slender petiole, 4 to 8 in. long, of a pale green above,













Carnarvonia aralifolia F.M. Bailey

usually glaucous or whitish underneath. Spikes  $1\frac{1}{2}$  to 2 in. long, the rhachis and flowers tomentose-pubescent and whitish, sometimes silvery. Bracts small and broad, imbricate in the very young spike, but very deciduous. Perianth 3 to  $3\frac{1}{2}$  lines long. Ovary villous. Style shortly clavate, and in the fertile flowers capped by a thick broad pulvinate stigma, which I have not observed in any other species. Fruit  $2\frac{1}{2}$  to 3 in. long, not so broad as in *X. pyriforme* and tapering into a thick beak recurved at the end.—*X. pyriforme*, var. *salicinum*, R. Br. Prot. Nov. 31; Meissn. in DC. Prod. xiv. 423; *Heleiia Scottiana*, F. Muell. Fragm. iv. 107; *Xylonectum Scottianum*, F. Muell. Fragm. v. 174, 215.

**Queensland.** Moreton Bay, A. Cunningham; Dogwood Creek, Leichhardt; Rockingham Bay, Dallachy; Darling Downs, Lau.

4. **X. angustifolium**, Kipp.; Meissn. in DC. Prod. xiv. 423. A shrub of 6 to 8 ft., with erect virgate branches, the inflorescence and often the very young shoots silky-pubescent, the adult foliage glabrous. Leaves linear or linear-lanceolate, 4 to 6 in. long, tapering into a fine rigid point when perfect, or sometimes obtuse even when young, contracted into a petiole, thick but flat, veinless except the midrib. Spikes rather loose, shorter than the leaves, flowering from near the base. Bracts broad, silky-villous, imbricate in the very young spikes but falling off very early. Perianth silky, about  $3\frac{1}{2}$  lines long. Anther-connectives tipped with a small gland. Style slender, slightly clavate at the end, the thickened portion covered with a short transparent pubescence in some flowers, glabrous in others, but in all those examined I found the anthers perfect and the ovary abortive, the perfect flowers may possibly therefore have the thick stigma of *X. salicinum*. Fruit ovoid, oblique, about  $2\frac{1}{2}$  in. long, slightly contracted towards the end, covered with a very close but dense tomentum.

**W. Australia**, Drummond, 5th coll. suppl. n. 7; Forrest? (in herb. F. Mueller); Ironstone range, Murchison river, Oldfield.

## 16. CARNARVONIA, F. Muell.

Flowers hermaphrodite. Perianth regular, nearly cylindrical in the bud, the segments free or nearly so, recurved in the upper portion, without distinct laminae. Anthers all perfect, linear, sessile below the middle of the perianth, the connective produced beyond the cells. No hypogynous glands. Ovary sessile or nearly so, tapering into an erect style with a small terminal stigma; ovules 2, laterally attached below the middle to a short funicle. Fruit a hard incurved follicle. Seeds compressed, produced at the upper end into a long wing.—A tree with compound leaves. Flowers small, in axillary simple or compound irregular racemes.

The genus is limited to a single species, endemic in Australia, with the flowers nearly of *Persoonia*, but with the fruit of *Hakea*. It is also closely allied in character to *Orites*, but with a very different habit and inflorescence.

1. **C. araliæfolia**, F. Muell. *Fragm.* vi. 81, t. 55, 56. A small or moderate sized tree, the young leaves slightly pubescent underneath, the inflorescence usually pubescent, the older leaves glabrous. Leaves compound, with 3 to 5 petiolulate leaflets digitate at the extremity of the petiole, or 1 to 3 of the leaflets replaced by pinnae, each with 2 or 3 petiolulate leaflets not digitate, the leaflets from broadly obovate and very obtuse to elliptical oblong or lanceolate and acute, entire or remotely toothed, tapering at the base, 3 to 5 in. long, the whole leaf from 6 or 8 in. to twice that length. Racemes very irregular, simple or more frequently compound, much shorter than the leaves with small deciduous trifoliolate bracts under the branches, and a narrow entire one under each flower, or under a cluster of 3 to 6 flowers terminating the peduncle or branches. Pedicels softly hirsute, 2 to 3 lines long, glabrous and twice as long when in fruit. Perianth about 2 lines long, densely hirsute with soft hairs. Ovary glabrous. Follicle much incurved, acuminate, 1½ in. long. Wing of the seed twice as long as the seed itself, the raphe much within the margin.

**Queensland.** Rockingham Bay, Dallachy.

### 17. ORITES, R. Br.

(*Oritina*, R. Br.)

Flowers hermaphrodite. Perianth regular, nearly cylindrical in the bud, the segments free or nearly so, dilated at the end into short usually concave laminae. Anthers all perfect, enclosed in the perianth-laminae in the bud, but with short filaments inserted below the laminae, the cells adnate to the slender connective which is not produced beyond them and is often scarcely conspicuous. Hypogynous glands linear, obtuse. Ovary sessile, with a terminal filiform straight style, scarcely thickened at the end, obtuse, with a small terminal stigma; ovules 2, amphitropous, laterally attached at or below the middle. Fruit an obliquely acute coriaceous follicle, more or less boat-shaped, the dorsal suture curved, the ventral one nearly straight. Seed compressed, with a terminal oblique or falcate wing, sometimes decurrent along the margins.—Shrubs or trees. Leaves alternate, more or less petiolate, entire toothed or rarely (in the same species) lobed. Flowers small, in terminal or axillary spikes, sessile or nearly so, in pairs within each bract. Bracts concave, imbricate in the very young spike but falling off long before the flowers expand.

The genus is endemic in Australia, and exclusively eastern.

Spikes all axillary. Leaves lanceolate, often toothed or divided on the barren branches.

Tall tree. Leaves mostly above 4 in. Branches inflorescence and ovary glabrous

Shrub. Leaves mostly under 3 in. Branches rhachis and ovary villous

Spikes terminal, rarely also in the upper axils. Leaves small and crowded.

Leaves flat, ovate, all toothed . . . . . 3. *O. Milligani*.

1. *O. excelsa*.

2. *O. diversifolia*.





- Leaves flat, oblong or lanceolate, obtuse, all entire . . . . . 4. *O. lancifolia*.  
 Leaves linear with revolute margins, obtuse or scarcely acute . . . . . 5. *O. revoluta*.  
 Leaves terete, grooved above, mucronate or pungent. Seeds surrounded by a narrow wing (the wing terminal and long in all other species) . . . . . 6. *O. acicularis*.

**1. *O. excelsa***, R. Br. *Prot. Nov.* 32. A handsome tree of 40 to 60 ft., usually quite glabrous. Leaves on the flowering branches lanceolate, obtuse or acute, tapering into a rather long petiole, entire or slightly toothed, 4 to 6 in. long, flat, reticulate, shining above, glaucous underneath; those of the barren branches often larger, toothed or deeply divided into 3 or 5 lanceolate toothed lobes. Spikes axillary, interrupted, shorter than the leaves, usually glabrous, the flowers in distant pairs. Bracts at first ovate acute and imbricate, but falling off at a very early stage. Perianth glabrous, about 3 lines long. Filaments broad, attached to about the middle of the claws. Ovary glabrous; style short. Follicle acuminate, about 1 in. long. Seed flat, the nucleus about 4 lines long, with a terminal wing at least as long.—Meissn. in DC. *Prod.* xiv. 423.

**N. S. Wales.** Deep shaded forests at the sources of the Hastings river, *A. Cunningham*; Macquarie river, *Fraser*; Tweed, Richmond and Clarence rivers, *C. Moore*.

**2. *O. diversifolia***, R. Br. in *Trans. Linn. Soc.* x. 190, *Prod.* 388. A shrub of 3 to 4 ft., with erect tomentose villous branches. Leaves lanceolate, with a callous point, contracted into a petiole of 1 to 2 or even 3 lines, those of the floral branches usually  $1\frac{1}{2}$  to 2 in. long, entire or with a few teeth towards the end, coriaceous, with recurved margins, smooth above, glaucous or slightly ferruginous underneath, glabrous or sprinkled with a few short hairs; those of the barren branches often twice as long and irregularly toothed above the middle or almost to the base and with more conspicuous veins. Spikes axillary, rather dense and about as long as the leaves or sometimes longer and looser, the rachis ferruginous-tomentose. Perianth glabrous, about 2 lines long, not very slender, the laminae scarcely broader than the claws. Ovary villous; style short in some flowers, elongated in others. Follicle acute,  $\frac{3}{4}$  in. long.—Meissn. in DC. *Prod.* xiv. 424; Hook. f. Fl. Tasm. i. 326.

**Tasmania.** Near the summit of Mount Wellington, *R. Brown*, *J. D. Hooker*, and others; Mount Field East, *F. Mueller*.

**3. *O. Milligani***, Meissn. in DC. *Prod.* xiv. 424. A rigid densely bushy shrub of  $1\frac{1}{2}$  to 3 ft., glabrous and glaucous except the inflorescence. Leaves shortly petiolate, ovate, coarsely toothed, thick and rigid, pinniveined but the veins not very prominent underneath and inconspicuous or slightly impressed above,  $\frac{1}{2}$  to 1 in. long. Spikes terminal, 1 to  $1\frac{1}{2}$  in. long. Bracts ovate, concave, rigid, ciliate or quite glabrous, very deciduous. Perianth glabrous, slender, nearly 3 lines long. Filaments very short, almost immediately under the laminae. Ovary ferruginous-villous.—Hook. f. Fl. Tasm. i. 326.

**Tasmania.** Mount Sorrel, Macquarie harbour, at an elevation of 4000 to 5000 ft., *Milligan*.

4. ***O. lancifolia***, *F. Muell.* in *Trans. Phil. Soc. Vict.* i. 108. A handsome glabrous shrub. Leaves shortly petiolate, crowded, oblong or oblong-lanceolate, obtuse, flat, with nerve-like or slightly recurved margins, mostly  $\frac{3}{4}$  to 1 in. long, coriaceous, prominently reticulate underneath, obscurely so or quite smooth and shining above. Spikes terminal or terminating short axillary shoots, or rarely also in the upper axils without leaves at their base, exceeding the leaves and sometimes 2 in. long, the rhachis ferruginous. Bracts villous, very deciduous. Perianth 2 to  $2\frac{1}{2}$  lines long. Filaments narrow, inserted more than  $\frac{1}{2}$  line below the short concave laminae. Ovary villous. Fruit about  $\frac{3}{4}$  in. long. Seed with a broad oblique terminal wing.

**Tasmania.** Rocky summits of the Australian Alps at an elevation of 5000 to 6000 ft., *F. Mueller*. Meissner, in DC. Prod. xiv. 423, reduces this plant to a variety of *O. excelsa*, but the small entire leaves, the inflorescence, the villous ovary, and other characters, appear to me to be constant.

5. ***O. revoluta***, *R. Br.* in *Trans. Linn. Soc.* x. 190, *Prod.* 388. A bushy shrub of 4 to 6 ft., the branches hoary or ferruginous-pubescent. Leaves rather crowded, sessile or shortly petiolate, linear, obtuse or scarcely acute, the margins revolute, thick, rigid, glabrous and smooth above, the under surface slightly tomentose but usually concealed,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. or rarely 1 in. long. Spikes terminal, sessile, mostly above 1 in. long, the rhachis ferruginous. Bracts ovate or oblong, villous outside, very deciduous. Perianth about  $2\frac{1}{2}$  lines long. Filaments narrow and short. Ovary densely villous. Follicle  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long, silky-villous and usually ferruginous. Seed with a broad falcate terminal wing.—Meissn. in DC. Prod. xiv. 424; Hook. f. Fl. Tasm. i. 326; A. Rich. Sert. Astrol. t. 25.

**Tasmania.** Mount Wellington, *R. Brown*; abundant on all the mountain ranges above 3000 ft. elevation, *J. D. Hooker*.

6. ***O. acicularis***, *R. Br.* *Prot. Nov.* 32. A bushy shrub of 4 or 5 ft. or sometimes only half that size, the foliage of a yellowish sickly green, quite glabrous. Leaves crowded, terete with a very narrow groove on the upper side, mucronate-acute and often pungent, contracted into a slender petiole, rigid and smooth,  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. long. Spikes terminal, usually shorter than the leaves, the rhachis ferruginous-pubescent. Perianth glabrous, scarcely 2 lines long, not so slender as in *O. revoluta*, the segments more tardily revolute and the laminae more concave than in that species. Filaments very short and broad, inserted immediately below the laminae. Ovary villous. Follicle about  $\frac{1}{2}$  in. long, glabrous or nearly so. Seed oblong, flat, surrounded by a narrow wing rather broader at the upper end, like that of many *Grevillea*.—Meissn. in DC. Prod. xiv. 424; Hook. f. Fl. Tasm. i. 326; A. Rich. Sert. Astrol. t. 25; *Oritina acicularis*, *R. Br.* in *Trans. Linn. Soc.* x. 294.

**Tasmania.** Mount Wellington, *R. Brown*; abundant on all the mountains at an elevation of 3000 to 4000 ft., *J. D. Hooker*. In its seeds this species approaches *Grevillea*, but the hypogynous glands and the distinct though short filaments are those of *Orites*. It differs from the other species of *Orites* as *Grevillea* does from *Hakea*, but the affinity in all other respects is so close with *O. revoluta* that botanists have all followed Brown in suppressing the genus he had at first proposed for it.





## 18. LAMBERTIA, Sm.

Flowers hermaphrodite. Perianth regular or nearly so, the tube elongated, often dilated upwards and slightly incurved, the lobes narrow, spirally revolute, the two lower ones sometimes more deeply separated. Anthers all perfect, inserted on the lobes and revolute with them, the connective shortly produced beyond the cells. Hypogynous scales either flat at least as long as the ovary and free or connate, or in one species wanting. Ovary very small, densely covered with long hairs, with 2 pendulous ovules. Style filiform sometimes slightly thickened and grooved on a level with the anthers; stigma small, terminal or shortly decurrent on the upper side. Fruit a short hard truncate sessile follicle, the lower (dorsal) margin produced into a thick horn, and often a horn also on the upper angle of each valve. Seeds where known flat, bordered by a narrow margin.—Shrubs. Leaves mostly in whorls of 3, rarely of 4, or sometimes scattered at the base of luxuriant shoots, entire or with spinescent teeth. Flowers red or yellow, usually long, solitary or 7 together sessile within an involucre of imbricate coloured bracts; the inner bracts long and narrow the outer ones short and broad, the involucres sessile and terminal or axillary.

The genus is endemic in extratropical Australia, the species all Western except *L. formosa*. The species with uniflorous involucres have the inflorescence, perianth, stamens and style very nearly of *Adenanthes*, but are readily distinguished by the whorled leaves, biovulate ovary and follicular fruit; the perianth segments sometimes remain closed as in that genus after the style has emerged a little lower down from the slit in the perianth tube, but when open they are much more revolute than in *Adenanthes*.

Involucres 1-flowered,  $\frac{1}{2}$  in. long or under. Leaves entire.

- |  |                          |
|--|--------------------------|
| Leaves obovate, obovate or oblong, mucronate . . . . . | 1. <i>L. uniflora</i> .  |
| Leaves linear . . . . .                                | 2. <i>L. rariflora</i> . |

Involucres 7-flowered, terminal or in the upper axils. Leaves entire.

Leaves very obtuse, usually small.

- |   |                        |
|---|------------------------|
| Leaves obovate to linear, flat or nearly so. Bracts rather obtuse . . . . . | 3. <i>L. inermis</i> . |
|---|------------------------|

- |  |                           |
|--|---------------------------|
| Leaves linear with revolute margins. Bracts with subulate points . . . . . | 4. <i>L. ericifolia</i> . |
|--|---------------------------|

Leaves mucronate, mostly linear and 1 to 2 in. long.

- |   |                           |
|---|---------------------------|
| Inner bracts of the involucre half as long as the perianth. Western species . . . . . | 5. <i>L. multiflora</i> . |
|---|---------------------------|

Inner bracts about as long as the perianth. Eastern species

Involucres 7-flowered, all axillary. Leaves pungent-pointed and often prickly-toothed.

Perianth  $1\frac{1}{4}$  to  $1\frac{1}{2}$  in. long, the tube dilated upwards and incurved

(as in all the preceding species) . . . . .

Perianth 7 to 8 lines long, the tube slender and straight . . . . .

7. *L. echinata*.

8. *L. ilicifolia*.

1. ***L. uniflora***, R. Br. in *Trans. Linn. Soc.* x. 188, *Prod.* 386. An irregularly branched shrub, sometimes low and diffuse, sometimes erect and 6 to 10 ft. high, glabrous or the young branches pubescent. Leaves crowded about the flowers, often in distant clusters in the lower part of the branches, very shortly petiolate, from ovate and under  $\frac{1}{2}$  in. to broadly oblong and above 1 in. long, mucronate acute and sometimes almost pungent or rounded at both ends, flat, smooth or reticulate, the

midrib prominent underneath. Involucres 1-flowered, the bracts very narrow and acute, almost scarious, the inner ones about  $\frac{1}{2}$  in. long. Perianth nearly  $1\frac{1}{2}$  in. long, dilated upwards and incurved, 2 of the lobes more united and less deeply revolute than the 2 others, the laminae short, without terminal appendages. Anther-connectives produced into oblong tips. Hypogynous scales free. Follicle smooth, the dorsal suture acuminate, the valves rounded.—Meissn. in Pl. Preiss. i. 578, ii. 263, and in DC. Prod. xiv. 420.

**W. Australia.** King George's Sound and adjoining districts, R. Brown, Baxter, Drummond, 3rd coll. n. 261, 262 (*in some herbaria*), Preiss, n. 762, and many others.

2. **L. rariflora**, Meissn. in Pl. Preiss. ii. 263, and in DC. Prod. xiv. 420. An erect shrub, the young branches pubescent and often hirsute with long fine spreading hairs, the adult foliage glabrous. Leaves very shortly petiolate or almost sessile, linear or the floral ones lanceolate at the base, mucronate, rather thinner and the veins more prominent than in *L. multiflora*, mostly 1 to 2 in. long, but a few exceeding 3 in. Involucre sessile, 1-flowered, the inner bracts 3 to 4 lines long and acute, the outer ones gradually shorter broader and more obtuse. Perianth at least  $1\frac{1}{2}$  in. long, pubescent dilated and incurved towards the middle, the laminae without appendages. Anther-connectives tipped with exceedingly short gland-like ends. Hypogynous scales free. Follicle smooth.

**W. Australia**, Drummond, 2nd coll. n. 312.

3. **L. inermis**, R. Br. in Trans. Linn. Soc. x. 188, Prod. 387. A shrub of 6 to 10 ft., the branches minutely tomentose or silky-pubescent. Leaves from obovate or oblong-spathulate to linear, obtuse, contracted into a short petiole,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long, flat or slightly convex or concave, glabrous and smooth above, minutely silky pubescent and often ferruginous underneath. Involucres 7-flowered, terminal, solitary or rarely 2 together, the bracts more obtuse than in the other species, the inner ones  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long. Perianth red according to some, yellow according to others, about  $1\frac{1}{2}$  in. long, dilated and incurved in the middle, the lobes narrow with short pubescent tips, all nearly equally revolute. Anther-connectives produced into appendages of  $\frac{1}{2}$  line. Hypogynous scales free. Follicle smooth.—Meissn. in Pl. Preiss. i. 578, ii. 263, and in DC. Prod. xiv. 420, *L. Drummondii*, Gardn. in Field. Sert. t. 22.

**W. Australia.** Lucky Bay, R. Brown, Baxter; King George's Sound to the Stirling Range, Cape Riche, and towards Swan river, Drummond, 1st coll. n. 594, and n. 87, Preiss, n. 763, 764, Harvey, Oldfield, Roe, F. Mueller; eastward to Middle Mount Barren, Maxwell.

4. **L. ericifolia**, R. Br. Prot. Nov. 30. A shrub of 6 to 10 ft., with virgate branches, the young shoots silky-pubescent, at length glabrous. Leaves linear, obtuse, with closely revolute margins, sessile or contracted into a very short petiole, usually about  $\frac{1}{2}$  in. long, but  $\frac{3}{4}$  in. on luxuriant sterile branches. Involucres 7-flowered, terminal, solitary or clustered 2 or 3 together, the bracts almost scarious ciliate and pubes-

cent or nearly glabrous, the inner ones subulate-acuminate and above  $\frac{1}{2}$  in. long, the outer ones short lanceolate and acute. Perianth above  $1\frac{1}{2}$  in. long, much dilated and incurved in the middle, the narrow laminae cohering late round the style, viscid, with short hood-shaped tips, the segments at length revolute. Anther-connectives produced into oblong appendages. Hypogynous scales lanceolate, acute, more or less connate (2 connate and 2 free in the flowers examined). Follicle smooth.—Meissn. in Pl. Preiss. ii. 263, and in D.C. Prod. xiv. 420.

**W. Australia.**, Baxter, Drummond, 3rd coll. n. 264; Stirling range, Salt river, and Cape Richo, Maxwell; at the base of Stirling range, F. Mueller.

5. **L. multiflora**, Lindl. Swan Riv. App. 32. A shrub of 3 or 4 ft., quite glabrous or the young shoots minutely pubescent, the flowering branches often acutely angular, the older ones terete. Leaves sessile, linear or the floral ones sometimes cordate-lanceolate, 1 to 2 in. long, mucronate, rigid, the midrib prominent underneath, the transverse veins chiefly conspicuous on the floral leaves. Involucres terminal, all 7-flowered (rarely fewer-flowered by abortion?), but owing to 2 or 3 heads being usually closely clustered together they have been described as 14- to 21-flowered, the inner bracts linear, fringed at the end and fully  $\frac{1}{2}$  in. long, the outer ones gradually shorter broader and entire. Perianth about  $1\frac{1}{2}$  in. long, slightly dilated and incurved above the middle, the laminae tipped with small hood-shaped appendages. Anther-connectives shortly produced beyond the cells. Hypogynous scales free, oblong-lanceolate. Ovary very densely hirsute. Follicle smooth, the valves terminating in lanceolate points.—Meissn. in Pl. Preiss. i. 579, ii. 264 and in DC. Prod. xiv. 421; Field. Sert. t. 23.

**W. Australia.** Swan river, Drummond, 1st coll. n. 595 (2nd coll.?) n. 136, Preiss, n. 766; between Moore and Murchison rivers, Drummond, 6th coll. n. 198.

6. **L. formosa**, Sm. in Trans. Linn. Soc. iv. 214, t. 20. A tall shrub, glabrous or with a slight pubescence on the young shoots and here and there a few spreading hairs. Leaves linear or slightly linear-cuneate, rarely linear-lanceolate, mucronate with a fine pungent point, the margins recurved, contracted into a very short petiole, rigid, shining above, pale or almost ferruginous underneath, with a prominent midrib, varying from scarcely 1 in. to above 2 in. long. Involucres terminal, usually solitary, 7-flowered (or fewer-flowered by abortion?), the inner bracts narrow, silky-pubescent outside,  $1\frac{1}{2}$  to 2 in. long, the outer ones short and ovate. Perianth 1 $\frac{1}{2}$  to 2 in. long, glabrous outside, dilated in the middle, the segments bearded inside below the anthers, the laminae with pubescent tips. Anther-connectives produced into minute appendages. Hypogynous scales united in a truncate tube or cup surrounding the ovary. Follicle smooth, glabrous or villous.—R. Br. in Trans. Linn. Soc. x. 188, Prod. 387, Prot. Nov. 30; Meissn. in DC. Prod. xiv. 421; Cav. Anal. Hist. Nat. i. 233, t. 15, Ic. vi. 34, t. 547; Lodd. Bot. Cab. t. 80; Bot. Reg. t. 528; Andr. Bot. Rep. t. 69; *Protea nectarina*, Wendl. Sert. Hann. 5, t. 21.

**W. Australia.** Port Jackson, R. Brown, Sieber, n. 24, and many others.

**7. *L. echinata*, R. Br. in *Trans. Linn. Soc.* x. 189, *Prod.* 387, *Prot. Nov.* 31.** A shrub of 8 to 10 ft. with rigid stout or virgate branches usually pubescent or hirsute. Leaves more or less cuneate,  $\frac{3}{4}$  to above 1 in. long, dilated at the end and truncate toothed or lobed, the teeth or lobes undulate and pungent-pointed, tapering into a narrow or broad base, sessile or petiolate, glabrous, rigid, the midrib and principal veins prominent, the whole foliage in shape texture and arrangement much resembling that of some *Gastrolobia*. Involucres 7-flowered, axillary, sessile, the bracts glabrous and acute, the inner ones narrow and 1 in. long or more, the outer ones gradually smaller and broader. Perianth yellow,  $1\frac{1}{4}$  in. long, dilated and incurved above the middle, the segments nearly equally revolute. Anther-connectives tipped with small almost gland-like points. Hypogynous scales rather short, obtuse, free. Follicle more or less echinate with short thick prickles.—Meissn. in *Pl. Preiss.* i. 579, and in *DC. Prod.* xiv. 421.

**W. Australia.** Lucky Bay, R. Brown, Baxter; King George's Sound and adjoining districts, J. Cunningham, Drummond, 3rd coll. 263, *Preiss.* n. 761, and many others.

*L. propinquua*, R. Br. *Prot. Nov.* 30, Meissn. in *DC. Prod.* xiv. 420, from King George's Sound or to the eastward, Baxter, appears to me to be scarcely even a variety of *L. echinata*, but merely slender branches with the leaves less toothed or entire and truncate.

**8. *L. ilicifolia*, Hook. *Jc. Pl.* t. 553.** A bushy shrub, glabrous and somewhat glaucous or the branches slightly pubescent, readily distinguished from all other species by the small flowers. Leaves in the typical form cuneate, acuminate, pungent-pointed, entire or with 1 or 2 prickly teeth on each side and 1 in. long, in other specimens ovate, pungent-pointed, entire or with 1 or 2 lateral teeth, rounded at the base and under  $\frac{1}{2}$  in. long, all thick rigid and scarcely veined besides the midrib. Involucres 7-flowered, all axillary, the bracts glabrous, the inner ones linear, about 5 lines long; the outer ones gradually smaller and broader. Perianth 7 to 8 lines long, with a few long hairs on the upper portion, the tube slender, the segments equally revolute with short obtuse laminae. Anther-connectives very shortly produced beyond the cells. Hypogynous scales entirely wanting in all the flowers examined. Style more or less bearded. Follicle unknown.—Meissn. in *Pl. Preiss.* i. 580, ii. 264 and in *DC. Prod.* xiv. 422.

**W. Australia,** Drummond, 3rd coll. n. 262, *Preiss.* n. 766.

#### 19. ADENOSTEPHANUS, Kl.

Flowers hermaphrodite. Perianth somewhat irregular, the tube slender, slightly incurved, the limb obliquely globular, the segments separating to the base, unequally revolute. Anthers all perfect, ovate, sessile in the base of the concave laminae, the connective not produced beyond the cells. Hypogynous glands short and thick, free or more or less united, all 4 equal or 2 shorter or deficient. Ovary sessile or shortly stipitate, with 2 pendulous orthotropous ovules; style filiform,









Tea-blossom  
Camellia sinensis

shortly clavate at the end, with a small stigma in the centre of a lateral convex disk. Fruit unknown.—Trees or shrubs. Leaves usually pinnate, with petiolulate entire or toothed leaflets. Flowers rather small, pedicellate in pairs in terminal or rarely axillary racemes, the pedicels often more or less connate. Bracts very deciduous (or sometimes none?).

The genus as far as hitherto known is chiefly Brasilian, with one New-Caledonian species, besides the Australian one which is endemic.

1. **A. Bleasdalii**, Benth. A small but beautiful tree (*Dallachy*), the branches petiolate and inflorescence minutely ferruginous-tomentose. Leaflets 3 to 17, petiolulate, ovate to oblong-lanceolate, acutely acuminate, somewhat undulate and irregularly mucronate-serrate, tapering or cuneate at the base, 2 to 5 in. long, pinniveined and reticulate, silky-villous on both sides when very young, but glabrous and green when full-grown, rather more shining above than below, the common rachis varying from 1 or 2 in. to above 1 ft. in length, and often irregularly winged at least between the upper leaflets, the terminal leaflet always developed and sometimes larger than the others. Racemes 1 to 2 in. long, usually several in a short panicle or solitary in the upper axils. Pedicels about 1 line long, those of each pair completely united into a single one with the two flowers obliquely sessile at or near the end. Perianth about  $3\frac{1}{2}$  lines long. Torus oblique, with one broad 2-lobed gland on the lower side sometimes almost divided into 2. Ovary glabrous, continuous with a short stipe at least as thick as the ovary.—*Grevillea Bleasdalii* or *Bleasdalea eupanioides*, F. Muell. Fragm. v. 90.

**Queensland.** Rockingham Bay, *Dallachy*. The structure and position of the flowers are in every respect those of some Brasilian *Adenostephani*, and especially of *A. organensis*, Endl., except as to the hypogynous glands, of which the two upper ones are absent, but in *A. organensis* I find them very unequal, two sometimes much smaller than the two others. The pendulous orthotropous ovules at once distinguish this plant both from *Grevillea*, of which it has in some respects the perianth and anthers, and from *Helicia*, of which it has the inflorescence. Whether *Adenostephanus* itself with the New Caledonian *Kermadecia* should or should not be reunited with *Rhopala* as sections, is a question the determination of which would require a careful re-examination of all the American species. The differences in the obliquity of the torus, in the hypogynous glands, and in the style end are not greater than those which separate different sections of *Grevillea*, and the united genus would be at once a natural and to all appearance a definitely characterised one.

## 20. GREVILLEA, R. Br.

(*Lysanthe* and *Stylurus*, Salisb., *Anadenia*, R. Br., *Manglesia*, Endl., *Strangea* and *Molloya*, Meissn.)

Flowers hermaphrodite. Perianth irregular or regular, the tube revolute or curved under the limb or straight and slender, the limb globular or rarely ovoid, usually oblique, the laminae usually cohering long after the tube has opened. Anthers all perfect, ovate, sessile in the base of the concave laminæ, the connective not produced beyond the cells. Hypogynous glands united in a single

semi-annular or semicircular gland occupying the upper (often the shortest) side of the torus or rarely completely annular surrounding the ovary, or altogether wanting. Ovary stipitate or rarely sessile, with 2 amphitropous ovules laterally attached about the middle; style filiform or somewhat dilated, usually long and protruding from the slit on the lower side of the perianth tube before the summit is set free from the limb, ultimately straightened and erect or in a few species of *Lissostyles* and *Conogynæ* remaining hooked, more or less dilated at the end into a straight oblique or lateral cone or disk bearing the small stigma in the centre of the disk or at the summit of the cone. Fruit a follicle, usually oblique with the ventral suture curved, either coriaceous and opening along the upper margin, or rarely woody and opening almost or quite in two valves. Seeds 1 or 2, flat orbicular or oblong, bordered all round by a membranous wing, or narrowly winged at the end or outer margin only or entirely wingless.—Shrubs or trees. Leaves alternate, very diversified in shape. Flowers in pairs along the rhachis of a short and unbel-like or elongated raceme, rarely reduced to a single pair; the racemes either terminal or also axillary, rarely all axillary. The indumentum usually consists of closely appressed hairs attached by the centre, rarely of erect or spreading hairs, and then usually forked at the base or clustered.

With the exception of three or four New Caledonian species the genus is limited to Australia. In the distributing the numerous species of this beautiful genus into sections, I have been unable in all respects to follow Brown, and still less Meissner, especially as to the foliage or seeds, for the former is far too variable to serve for much beyond specific distinction, and the seeds are unknown in a large number of the species. The following sectional characters are derived chiefly from the inflorescence and flowers, and if less absolute than could have been wished, are the best I could devise. The first eight sections constitute Meissner's subgenus *Eugrevillea*, with the perianth revolute under the limb, and the stigmatic disk oblique or lateral, usually flat or convex, the tenth and eleventh proposed as subgenera by Meissner, have the perianth straight, and the stigmatic disk replaced by a straight cone, the intermediate ninth section, *Conogynæ*, and most of the species of the sixth, with the perianth recurved or revolute at the top, as in the preceding ones, have the straight stigmatic cone of *Anadenia* and *Manglesia*. A very few of the species of the eighth section, *Lissostyles*, have also the stigmatic cone shaped as in the last sections, but very oblique. The absence of the hypogynous gland, one of the chief characters on which the genus *Anadenia* was founded, occurs also in a few species belonging to other sections of true *Grevillea*. The peculiar style of *Manglesia* passes into that of *Anadenia* through *G. aerobotrys*, and *G. didymolotrys* closely connects *Conogynæ* with *Anadenia*.

SECT. 1. ***Eugrevillea***.—Racemes secund, and elongated, or few-flowered. Perianth-tube dilated below the middle and usually opening on the lower side, revolute under the limb. Torus small, straight or slightly oblique. Stigmatic disk lateral.

SERIES 1. ***Leiogynæ***.—Ovary glabrous, stipitate. Torus sometimes oblique, but with the gland-side the longest. Species all Western, one also in S. Australia.

Racemes sessile or nearly so on leafy branches. Leaves linear, undivided, obtuse.

Racemes loose, several-flowered. Stipes of the ovary thick and flattened.

- |                                |                            |
|--------------------------------|----------------------------|
| Leaves narrow-linear . . . . . | 1. <i>G. pinaster</i> .    |
| Leaves oblong-linear . . . . . | 2. <i>G. obtusifolia</i> . |

- Racemes mostly reduced to a single pair of flowers. Leaves very narrow linear . . . . . 3. *G. sparsiflora*.  
 (See also sect. *Lissostyles*, ser. *Puniceæ*.)
- Racemes sessile, few-flowered. Leaves lobed or divided. Styles very long.  
 Leaves with 3 broad triangular pungent-pointed lobes . . . . . 4. *G. macrostylis*.  
 Leaves with 3 or 5 narrow-linear divaricate rigid pungent-pointed segments . . . . . 5. *G. tripartita*.  
 Racemes 2- or 4-flowered, usually several on a short leafless flexuous peduncle or branch.  
 Leaves once or twice 3-lobed with broad rigid lobes. Rhachis very flat . . . . . 6. *G. platypoda*.  
 Leaves once or twice ternately divided into narrow rigid divaricate pungent-pointed segments . . . . . 7. *G. patentiloba*.  
 Leaves regularly pinnate with narrow rigid but not pungent segments . . . . . 8. *G. pectinata*.  
 Racemes loose but short, several on long leafless peduncles or branches.  
 Leaves regularly pinnate with long narrow-linear rigid but not pungent segments . . . . . 9. *G. plurijuga*,  
 Leaves simple, narrow-linear, often very long . . . . . 10. *G. undiflora*.  
 Racemes rather dense, many-flowered. Leaves pinnate with narrow-linear or filiform segments.  
 Leaves simply pinnate . . . . . 11. *G. stenomera*.  
 Leaf-segments mostly again divided . . . . . 12. *G. Thelmanniana*.

SERIES 2. *Hebegynæ*.—Ovary sessile or scarcely stipitate, densely villous. Torus sometimes but very rarely slightly oblique, with the gland side the shortest.

- Leaves obtuse or mucronate, not pungent.  
 Leaves narrow-linear, rigid, mostly undivided, 1 to 2 in. long. Racemes short . . . . . 13. *G. concinna*.  
 Leaves mostly pinnate with narrow-linear rigid segments doubly grooved underneath.  
 Leaf-segments 3 to 9, under 2 in. long. Racemes silky, 1½ to 3 in. long.  
 Leaves glabrous when full-grown . . . . . 14. *G. Hookeriana*.  
 Leaves silky on both sides . . . . . 15. *G. Baxteri*.  
 Leaf-segments few or leaves entire, 4 to 8 in. long.  
 Racemes villous.  
 Racemes 2 to 4 in. long. Perianth ¼ in. . . . . 16. *G. pterosperma*.  
 Racemes dense, 3 to 6 in. long. Perianth ½ in. long . . . . . 17. *G. eriostachya*.  
 Leaf-segments numerous, regular, under 2 in. long.  
 Racemes densely villous, 2 to 4 in. . . . . 18. *G. thrysoides*.  
 Leaves pinnate with linear or lanceolate segments, glabrous above, silky underneath. Perianth villous.  
 Leaf-segments very narrow, 4 to 8 in. long, often divided . . . . . 19. *G. chrysodendron*.  
 Leaf-segments few, linear-lanceolate, 2 to 4 in. long . . . . . 20. *G. Banksii*.  
 Leaf-segments numerous, regular, linear-oblong, ¾ to 1½ in. long . . . . . 21. *G. Caleyi*.  
 Leaves entire or pinnately-toothed or lobed, lanceolate to ovate.  
 Leaves long, lanceolate. Perianth silky.  
 Tall and erect. Racemes dense. Perianth-tube narrow . . . . . 22. *G. asplenifolia*.  
 Prostrate. Racemes loose. Perianth-tube broad, expanding into an orbicular disk . . . . . 23. *G. cirsifolia*.  
 Leaves ovate or oblong, obtuse, entire, 2 to 5 in. long . . . . . 24. *G. laurifolia*.  
 Leaves oblong or lanceolate, acute, 6 to 10 in. long, entire or broadly pinnatifid . . . . . 25. *G. Barklyana*.

- Leaves or leaf-lobes pungent-pointed (the first five species all Eastern).
- Leaves ovate or cuneate, with prickly teeth or lobes.
- Prostrate. Leaves ovate, undulate, shortly prickly-toothed. . . . . 26. *G. repens*.
- Torus slightly oblique . . . . . 26. *G. repens*.
- Erect or spreading. Leaves ovate oblong or cuneate, irregularly lobed. Torus straight.
- Leaves usually villous, pinnately many-toothed or lobed. . . . . 27. *G. aquifolium*.
- Stipes of the ovary very short . . . . . 27. *G. aquifolium*.
- Leaves glabrous above or nearly so, silky underneath, cuneate with few lobes. Stipes of the ovary as long as the ovary . . . . . 28. *G. ilicifolia*.
- Leaves glabrous, deeply pinnatifid, with broad prickly lobes.
- Leaf-lobes oblong or ovate, entire or rarely 2- or 3-lobed . . . . . 29. *G. Gaudichaudii*.
- Leaf-lobes mostly cuneate, very rigid, 2- or 3-lobed.
- Racemes dense . . . . . 30. *G. acanthifolia*.
- Leaf-lobes mostly again pinnatifid. Racemes loose.
- Western species . . . . . 31. *G. bipinnatifida*.
- Leaves once or twice ternately divided into linear rigid divaricate segments. Western species.
- Racemes dense. Flowers numerous, about  $\frac{1}{4}$  in. long, nearly sessile . . . . . 32. *G. armigera*.
- Racemes loose. Flowers nearly  $\frac{1}{2}$  in. long, on slender pedicels . . . . . 33. *G. asparagoides*.

**SECT. 2. *Ptychocarpa*.**—Racemes short, often umbel like. Perianth tube dilated below the middle and usually opening on the lower side, revolute under the limb. Torus small, straight or nearly so. Ovary sessile or very shortly stipitate, densely villous or rarely with only a tuft of hairs at the base. Stigmatic disk lateral. Leaves entire. Species all Eastern.

- Perianth densely villous.
- Leaves ovate or oblong, mostly obtuse, the upper surface glabrous or minutely scabrous . . . . . 34. *G. floribunda*.
- Leaves ovate to oblong-lanceolate, mucronate-acute, the upper surface scabrous-dotted . . . . . 35. *G. cinerea*.
- (See also 39, *G. arenaria*.)
- Leaves oblong to linear, obtuse, pubescent or villous on both sides . . . . . 36. *G. alpina*.
- Perianth sprinkled or silky with appressed hairs.
- Leaves oblong or lanceolate, obtuse or with a small callous point.
- Leaves glabrous or scabrous above, mostly narrow.
- Perianth-segments acuminate or acute . . . . . 37. *G. montana*.
- Perianth-segments obtuse . . . . . 38. *G. obtusiflora*.
- Leaves silky or minutely pubescent above, mostly rather broadly-oblong or cuneate. Perianth-segments acuminate, sometimes villous . . . . . 39. *G. arenaria*.
- Leaves ovate or lanceolate, acutely acuminate or mucronate with a fine point. Perianth-segments obtuse . . . . . 40. *G. mucronulata*.
- Perianth quite glabrous.
- Leaves ovate or lanceolate, nearly flat, glabrous as well as the branches, or slightly pubescent . . . . . 41. *G. Baueri*.
- Leaves linear, obtuse, much revolute, villous or hirsute as well as the branches . . . . . 42. *G. lanigera*.
- Leaves linear or linear-lanceolate, mostly acute and revolute, the upper surface glabrous, scabrous or slightly hirsute.
- Ovary villous. Spreading or diffuse shrub, usually villous 43. *G. ericifolia*.

Ovary glabrous except a tuft of hairs at the base.

Spreading shrub with linear-subulate leaves, mostly

under 1 in. long . . . . . 44. *G. divaricata*.

Erect shrub with erect leaves mostly above 1 in. long 45. *G. rosmarinifolia*.

SECT. 3. **Plaziopoda**.—*Racemes r. riosus*. Perianth-tube dilated below the middle and usually opening on the lower side, revolute under the limb. Torus very oblique, the gland side the short st. Ovary ribbed except in a few axillary-flowered species. Stigmatic disk very oblique or lateral.

Racemes terminal, erect, sometimes secund. Ovary densely villous. Style very long. Eastern species (except *G. Wilsonii*).

Leaves oval-elliptical or oblong-lanceolate, large, entire . . . . . 46. *G. Goodii*.

Leaves mostly above 6 in. long, simple or pinnate with narrow-lanceolate obliquely penniveined lobes . . . . . 47. *G. venusta*.

Leaves linear, above 6 in. long, simple or pinnate with long-linear lobes.

Racemes oblong, glabrous except the ovary . . . . . 48. *G. longistyla*.

Racemes usually paniculate, viscid villous . . . . . 49. *G. juncifolia*.

Leaves ternately divided into narrow-linear rigid divaricate pungent-pointed segments. Western species . . . . . 50. *G. Wilsonii*.

(See also 73. *G. Huegelii*, with a glabrous ovary.)

Racemes terminal, short, umbel-like. Style very long. Leaves linear or linear lanceolate, acute, entire. Eastern species . . . . . 51. *G. lavandulacea*.

Racemes short, few-flowered, sessile, terminal and in the upper axils. Style short. Western species (except *G. aspera*).

Leaves ovate, rigid, sinuate and prickly-toothed . . . . . 52. *G. insignis*.

(See also 71. *G. Cunninghamii*, with a glabrous ovary).

Leaves entire, narrow or rarely ovate.

Branches sparingly or shortly pubescent.

Leaves ovate or lanceolate,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long or oblong and longer, obtuse . . . . . 53. *G. Brownii*.

Leaves linear or lanceolate,  $\frac{1}{2}$  to 2 in. long. Flowers small.

Leaves smooth or minutely scabrous above . . . . . 54. *G. fasciculata*.

Leaves veined and very scabrous above . . . . . 55. *G. aspera*.

Leaves linear or lanceolate, 2 to 4 in. long . . . . . 56. *G. brachystylis*.

Branches densely and softly villous. Perianth-tube broadly saccate at the base . . . . . 57. *G. saccata*.

Branches hirsute with long fine hairs. Perianth small, not saccate . . . . . 58. *G. Drummondii*.

Racemes reduced to 1 or 2 pairs of flowers mostly axillary.

Torus sometimes less oblique. Leaves entire.

Leaves narrow-linear. Ovary villous. Style long.

Leaves angular-terete,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long . . . . . 59. *G. disjuncta*.

Leaves convex and smooth above, channelled underneath,  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. long . . . . . 60. *G. haplantha*.

Leaves narrow linear. Ovary villous. Style short . . . . . 61. *G. pinifolia*.

Leaves linear-subulate, pungent-pointed. Ovary glabrous.

Style long . . . . . 62. *G. acuaria*.

Leaves ovate or orbicular, small, flat. Ovary glabrous. Style long . . . . . 63. *G. singuliflora*.

Leaves linear-cuneate or oblong, 1-nerved. Ovary glabrous.

Fruit small . . . . . 64. *G. pauciflora*.

Leaves linear or linear-cuneate, thick, nerveless.

Fruit 1 to  $1\frac{1}{2}$  in. long. Flowers unknown. Eastern species 65. *G. Strangea*.

Fruit 2 to  $2\frac{1}{2}$  in. long. Ovary villous. Style short. Perianth unknown. Western species . . . . . 66. *G. cynanchicarpa*.

SECT. 4. **Calothrysus**.—Racemes *round*, usually many flowered. Perianth-tube more or less dilated below the middle and usually opening on the lower side, revolute under the limb. Torus oblique, the gland side the shortest. Ovary glabrous, stipitate. Species all tropical except *G. quercifolia* and *G. Huegelii*.

Leaves undivided, ovate or lanceolate, angular or prickly-toothed.

Leaves petiolate or tapering at the base.

Leaves glabrous, mostly sinuate-toothed.

Racemes mostly terminal on long peduncles. Perianth bearded inside with very short hairs . . . . . 67. *G. quercifolia*.

Racemes axillary, shortly pedunculate. Perianth densely bearded inside with erect hairs . . . . . 68. *G. angulata*.

Leaves silky-pubescent at least when young, mostly angular. Racemes axillary. Perianth bearded inside with spreading or reflexed hairs.

Perianth slightly dilated at the base as in *G. angulata* 69. *G. Wickhami*.

Perianth much dilated at the base as in *G. Cunninghamii* . . . . . 70. *G. ayrisolia*.

Leaves sessile, deeply cordate with large stem-clasping auricles, sinuate and prickly-toothed . . . . . 71. *G. Cunninghamii*.

Leaves sessile, deeply and regularly pinnatifid with rigid pungent pointed lobes . . . . . 72. *G. pungens*.

Leaves once or twice divided into short linear rigid divaricate segments. Racemes very short with long flowers. Desert species . . . . . 73. *G. Huegelii*.

Leaves not toothed, entire or divided into long narrow segments. Racemes usually paniculate.

Leaves undivided, broadly falcate, longitudinally reticulate . . . . . 74. *G. dimidiata*.

Leaves mostly pinnate, the segments oblong lanceolate, longitudinally reticulate . . . . . 75. *G. heliosperma*.

Leaves mostly pinnate, the segments oblong-lanceolate or linear, pinniveined with numerous oblique parallel primary veins . . . . . 76. *G. refracta*.

Leaf-segments numerous, linear, obscurely veined above, 1-nerved underneath. Racemes long. Perianth above  $\frac{1}{2}$  in. long . . . . . 77. *G. Dryandri*.

Leaf-segments not numerous, linear or lanceolate, obscurely veined above, 1-nerved underneath. Racemes dense.

Perianth under  $\frac{1}{2}$  in. long . . . . . 78. *G. polystachya*.

Leaves mostly bipinnatifid with lanceolate lobes or segments 79. *G. robusta*.

SECT. 5. **Cycladenia**.—Racemes many flowered, paniculate (scarcely seen!) Perianth nearly of Cycloptera, but larger. Torus straight. Hypogynous gland annular (deficient on the lower side in all other sections). Ovary glabrous, stipitate. Western species.

Leaves divided into short rigid linear divaricate pungent-pointed segments . . . . . 80. *G. annulifera*.

Leaves divided into numerous very long narrow-linear segments . . . . . 81. *G. leucopteris*.

SECT. 6. **Cycloptera**.—Racemes dense, usually paniculate. Flowers small. Perianth-tube narrow, recurved or reflexed under the limb. Torus straight. Ovary glabrous, stipitate. Fruit usually broad. Seeds winged all round. Tropical or subtropical species.

Leaves longitudinally veined.

Leaves mostly pinnate.

Leaf-segments linear, very long and narrow . . . . . 82. *G. leucadendron*.

Leaf-segments linear cuneate, obtuse, under 5 in. long . . . . . 83. *G. pyramidalis*.

Leaves undivided, very long, with 9 to 13 closely parallel veins . . . . . 84. *G. striata*.

- Leaves undivided, falcate, longitudinally reticulate and irregularly several-veined . . . . . 85. *G. mimosoides*.  
 Leaves large, penniveined, ovate-lanceolate or oblong.  
   Leaves entire or deeply pinnatifid, rather thin, glabrous above, silvery-silky underneath . . . . . 86. *G. Hillii*.  
   Leaves rather thick, entire, minutely pubescent on both sides . . . . . 87. *G. gibbosa*.

SECT. 7. **Eriostylis**.—Racemes umbellike, sessile or nearly so. Flowers small, villous. Perianth-tube narrow or rather broad, revolute under the limb. Torus straight. Ovary shortly stipitate, villous as well as the style; stigmatic disk lateral. Leaves entire.

- Hairy style produced into an appendage beyond the stigmatic disk. Eastern species.  
 Leaves ovate to broadly lanceolate. Stigmatic disk orbicular, the hairy appendage reflexed . . . . . 88. *G. luxifolia*.  
 Leaves lanceolate or linear. Stigmatic disk oblong, the hairy appendage erect . . . . . 89. *G. phyllocoidea*.  
 Hairy style not produced (or obscurely so in *G. sphacelata*), the disk orbicular or oval. Western species (except *G. sphacelata*).  
   Leaves lanceolate or linear, scabrous-punctate. Young branches closely silky. Stigmatic disk oval.  
     Stipes of the ovary much longer than the gland. Stigmatic disk not projecting beyond the hairy style . . . . . 90. *G. sphacelata*.  
     Stipes of the ovary very short. Stigmatic disk with a free glabrous margin . . . . . 91. *G. occidentalis*.  
     Young branches villous. Stigmatic disk thick, with an incurved turbinete glabrous back . . . . . 94. *G. oxystigma*.  
 Leaves narrow-linear, rarely lanceolate, smooth.  
   Leaves linear-terete, pungent-pointed. Stigmatic disk oval, flat . . . . . 92. *G. acerosa*.  
   Leaves linear, not pungent. Stigmatic disk orbicular, flat . . . . . 93. *G. umbellulata*.  
   Leaves linear or lanceolate, not pungent. Stigmatic disk thick with an incurved turbinete glabrous back . . . . . 94. *G. oxystigma*.  
 Hairy style not produced beyond the base of the stigmatic disk which terminates in an oblong involute appendage.  
   Leaves mostly lanceolate, smooth. Stigmatic disk glabrous on the back . . . . . 95. *G. Candolleana*.  
   Leaves mostly linear, scabrous-punctate. Stigmatic disk tomentose on the back . . . . . 96. *G. scabra*.

SECT. 8. **Lissostylis**.—Racemes short and dense (except *G. Victoriae* and *G. trachythecla*). Perianth tube narrow, revolute or recurved under the limb. Torus straight. Ovary glabrous, stipitate. Stigmatic disk (or cone in the last two species) very oblique or lateral.

SERIES 1. **Puniceæ**.—Flowers not numerous or in a loose raceme, the perianth about  $\frac{1}{2}$  in. long. Leaves entire. Eastern species.

- Leaves penniveined, ovate to broadly lanceolate. Racemes loose. Style not very long.  
 Leaves oval or ovate-oblong ( $1\frac{1}{2}$  to  $2\frac{1}{2}$  in.), veinless above, penniveined underneath . . . . . 97. *G. Miquelianæ*.  
 Leaves obovate or oval ( $\frac{3}{4}$  to  $1\frac{1}{4}$  in.), veinless above, 1-nerved underneath . . . . . 98. *G. brevifolia*.  
 Leaves lanceolate (2 to 4 in.), penniveined above, 1-nerved underneath . . . . . 99. *G. Victoriae*.

- Leaves pinniveined, mostly lanceolate, the lateral nerves if present close to the margin. Style long.  
 Leaves mostly under  $1\frac{1}{2}$  in. long. Racemes mostly terminal 100. *G. punicea*.  
 Leaves mostly 2 to 4 in. long. Racemes mostly axillary . 101. *G. oleoides*.  
 Leaves narrow, rigid, pungent-pointed.  
 Leaves linear or lanceolate, mostly 3-nerved . . . . . 102. *G. trinervis*.  
 Leaves linear-subulate, mostly 1-nerved . . . . . 103. *G. juniperina*.  
 (See also *Eugrevillea*, ser. *Leiogynæ*.)

SERIES 2. *Sericeæ*.—Flowers numerous in a short dense raceme. Perianth-tube under 4 lines long. Leaves entire. Fruit usually smooth. Eastern species.

- Leaves oblong-lanceolate or almost linear, obtuse or with a small point, silky underneath.  
 Flowers silky-pubescent. Leaves rarely  $1\frac{1}{3}$  in. long . . . . . 104. *G. sericea*.  
 Flowers ferruginous-villous. Leaves mostly  $1\frac{1}{2}$  to 2 in. long 105. *G. capitellata*.  
 Leaves oblong-lanceolate or linear, flat, green on both sides . 106. *G. lerophylla*.  
 Leaves mostly linear, very acute.  
 Leaves with the midrib very prominent underneath, doubly grooved when narrow.  
 Leaves open underneath between the midrib and margin.  
 Perianth-tube  $2\frac{1}{2}$  to 3 lines long . . . . . 107. *G. linearis*.  
 Leaves very rigid, doubly grooved underneath.  
 Perianth-tube  $2\frac{1}{2}$  to 3 lines long . . . . . 108. *G. confertifolia*.  
 Perianth-tube not 2 lines long . . . . . 109. *G. parviflora*.  
 Leaves (under 1 in.) with the midrib not prominent underneath, singly grooved when narrow. Perianth-tube about 2 lines long . . . . . 110. *G. australis*.

SERIES 3. *Occidentales*.—Flowers numerous in a dense raceme or head. Perianth-tube under 4 lines long. Leaves entire or divided. Fruit usually (but not always) rugose or tuberculate. Western species.

- Racemes short. Bracts none or minute and falling off early.  
 Stigmatic disk flat or convex.  
 Leaves rather thick, obtuse or mucronate, oblong-cuneate or linear, entire or divided.  
 Racemes ovate, on short peduncles. Perianth-tube about 2 lines long.  
 Leaves entire or rarely 2- or 3-toothed when broad . 111. *G. commutata*.  
 Leaves mostly pinnate with narrow linear segments . 112. *G. pinnatisecta*.  
 Racemes globular, on filiform peduncles. Perianth-tube about 1 line long . . . . . 113. *G. argyrophylla*.  
 Leaves rather thick, narrow-linear, all entire.  
 Leaves doubly grooved underneath. No hypogynous gland. Fruit smooth . . . . . 114. *G. brachystachya*.  
 Leaves long, 1-nerved underneath, concave and nerveless above. Gland pulvinate . . . . . 115. *G. Endlicheriana*.  
 Leaves not very thick, varying from broadly cuneate and acutely toothed or lobed to narrow-linear and very acute.  
 Leaves silky-pubescent underneath . . . . . 116. *G. manglesioides*.  
 Leaves glabrous on both sides . . . . . 117. *G. diversifolia*.  
 Leaves linear-terete, singly or doubly grooved.  
 Leaves slender, entire or rarely 2- or 3-lobed. Flowers very small.  
 Leaves 4 to 6 in. long. Racemes axillary and terminal . . . . . 118. *G. filifolia*.  
 Leaves 1 to 2 in. long. Racemes axillary . . . . . 119. *G. hakeoides*.  
 Leaves ternately divided into rigid divaricate pungent-pointed segments . . . . . 120. *G. teretifolia*.

- Racemes short. Bracts membranous, broad, imbricate in the young racemes, persisting nearly to the flowering. Stigmatic disk flat or convex.
- Racemes on long terminal leafless simple or branched peduncles.
- Leaves large, glaucous, undulate, deeply pinnatifid, with obovate or oblong lobes . . . . . 121. *G. eryngioides*.
- Leaves narrow-linear, rigid, entire or deeply trifid, doubly grooved underneath . . . . . 122. *G. bracteosa*.
- Racemes dense, terminal. Stigmatic disk conical in the centre or replaced by an oblique cone.
- Racemes short, sessile. Leaves short, crowded, with 3 or 5 narrow-linear segments . . . . . 123. *G. crithmifolia*.
- Racemes elongated, cylindrical. Leaves narrow-linear, entire or 3-lobed . . . . . 124. *G. trachytheca*.
- SECT. 9. Conogyne.**—*Racemes dense or rarely slender, short or cylindrical. Flowers small. Perianth-tube slender, recurved under the limb. Torus straight. Ovary stipitate. Style filiform, with an erect stigmatic cone.*
- Hypogynous gland none or very obscure. Racemes short or rarely elongated and loose or cylindrical.
- Ovary villous. Leaves ternately divided. Eastern species.
- Leaf-segments narrow-linear, rigid, pungent-pointed . . . . . 125. *G. triternata*.
- Leaf-segments oblong-cuneate or lanceolate, prickly-toothed . . . . . 126. *G. ramosissima*.
- Ovary glabrous. Western species except *G. nematophylla*.
- Leaves toothed or pinnatifid.
- Leaves ovate, prickly-toothed, glabrous, glaucous . . . . . 127. *G. monticola*.
- Leaves mostly linear-cuneate or lanceolate, toothed or pinnatifid, silky underneath . . . . . 128. *G. Muelleri*.
- Leaves cuneate or linear, 3-fid or 3-toothed.
- Racemes short and sessile. Entire base of the leaf short and broad or linear . . . . . 129. *G. trifida*.
- Racemes oblong-cylindrical, pedunculate. Entire base of the leaf long and cuneate. Leaf very glaucous . . . . . 130. *G. synapheæ*.
- Leaves mostly pinnate with pinnatifid or pinnate pinnae. Ultimate leaf-segments short and broad, rhachis flexuose. Racemes oblong-cylindrical, compact . . . . . 131. *G. flexuosa*.
- Leaf-segments narrow, rhachis and stems very slender. Racemes elongated, loose . . . . . 132. *G. leptobotrya*.
- Leaves twice or thrice ternately divided into linear pungent-pointed segments.
- Leaf-segments short. Racemes short and sessile . . . . . 133. *G. brevicuspis*.
- Leaf-segments long. Racemes cylindrical elongated and loose . . . . . 134. *G. intricata*.
- Leaves filiform, entire. Racemes cylindrical, paniculate . . . . . 135. *G. dilymnobotrya*.
- Hypogynous gland semiannular. Racemes cylindrical, narrow, in a terminal leafless panicle.
- Leaves flat, oblong or lanceolate. Ovary stipes very short . . . . . 136. *G. polybotrya*.
- Leaves linear-terete, very long. Ovary stipes long . . . . . 137. *G. nematophylla*.
- SECT. 10. Anadenia.**—*Racemes dense, short or cylindrical. Flowers small. Perianth tube slender, straight, limb erect. Torus straight. Style filiform or dilated upwards, not contracted under the erect stigmatic cone. Western species except *G. anethifolia*.*
- Hypogynous gland semiannular. Leaves linear-terete, ternately divided.
- Leaf-segments divaricate, under 1 in. long, pungent-pointed.
- Racemes short, sessile. Style dilated and flattened . . . . . 138. *G. anethifolia*.

- Racemes cylindrical, spike-like, sessile, the rhachis densely villous. Style long, filiform . . . . . 139. *G. paradoxa*.  
 Leaf-segments erect, above 1 in. long, not pungent. Racemes spike-like, pedunculate along a common leafless peduncle . . . . . 140. *G. petrophiloides*.  
 No hypogynous gland.  
 Leaves flat, pinnate, with 3-lobed or pinnatifid pinnae.  
   Racemes rather short. Ovary stipitate.  
   Pinnae 3 or 5. Perianth 2½ lines long . . . . . 141. *G. tenuiflora*.  
   Pinnae 7 to 11. Perianth 1½ lines long . . . . . 142. *G. pulchella*.  
 Leaves entire or toothed at the end. Racemes cylindrical.  
   Ovary nearly sessile.  
   Leaves narrow-cuneate, 3-lobed or 3-toothed at the end.  
     Ovary villous . . . . . 143. *G. rufa*.  
   Leaves obovate-oblong or lanceolate, entire. Ovary glabrous.  
     Leaves glabrous . . . . . 144. *G. Shuttleworthiana*.  
     Leaves more or less pubescent . . . . . 145. *G. integrifolia*.  
 Leaves narrow-linear. Ovary glabrous.  
   Fruit 3 or 4 times as long as broad . . . . . 146. *G. stenocarpa*.

SECT. 11. **Manglesia**.—Racemes short, dense, axillary. Flowers small. Perianth-tube straight, slender or fusiform; limb erect. Torus straight. Ovary glabrous, stipitate. Style turgid in the middle or fusiform, constricted under the erect stigmatic cone. Western species.

- Hypogynous gland none. Style fusiform. Stem-leaves broadly cuneate; floral leaves with 3 linear pungent segments . . . . . 147. *G. acerobrya*.  
 Hypogynous gland semiannular. Style turgid in the middle. Capsule very rugose. Leaves mostly above 1 in. long.  
   Leaves quite glabrous. Racemes branching.  
     Leaves broad, once or twice trifid with short lobes . . . . . 148. *G. glabrata*.  
     Leaves narrow, with 3 lanceolate lobes . . . . . 149. *G. ornithopoda*.  
     Leaves mostly binate with terete pungent-pointed segments. Fruit erect . . . . . 150. *G. paniculata*.  
   Leaves more or less hoary, at least when young. Racemes simple.  
     Leaves mostly binate with narrow pungent-pointed segments. Fruit transverse . . . . . 151. *G. biternata*.  
     Leaves linear-cuneate, simple or trifid, villous underneath . . . . . 152. *G. triloba*.  
 Capsule smooth. Leaves mostly under 1 in. long, with pungent-pointed lobes or segments or teeth.  
   Leaves broad, stem-clasping with large auricles, prickly-toothed . . . . . 153. *G. amplexans*.  
 Leaf lobes more or less dilated, showing the under surface . . . . . 154. *G. vestita*.  
 Leaf-segments narrow-linear, very rigid, doubly grooved underneath . . . . . 155. *G. tridentifera*.  
 Leaf-segments slender, terete, mostly 1-grooved . . . . . 156. *G. erinacea*.

*G. berberifolia*, *podocarpifolia* and *trifurcata*, Sweet, and *G. Flindersii* and *muco-nifolia*, A. Cunn., included in Steud. Nom. Bot. ed. 2, are garden names of unpublished species, which, if genuine *Grevilleæ*, must be the same as some of those here described.

SECT. 1. EUGREVILLEA.—Racemes secund and elongated or few-flowered, rarely reduced to 1 or 2 pairs of flowers, usually terminal. Perianth-tube usually dilated below the middle, and opening on the lower side, the segments otherwise long-cohering, revolute above the

middle. Torus small, straight or slightly oblique. Stigmatic disk flat or convex, lateral.

SERIES 1. LEIOGYNÆ.—Ovary glabrous, stipitate. Torus sometimes oblique but with the gland-side the longest (not the shortest as in *Plagiopoda* and *Calothrysus*).

This series differs from *Lissostylis* in the more secund inflorescence and in the shape of the perianth.

1. **G. pinaster**, Meissn. in Hook. Kew Journ. vii. 76, and in D.C. Prod. xiv. 367. A bushy shrub attaining 3 or 4 ft. the young branches tomentose, the adult foliage glabrous. Leaves linear, usually very narrow and doubly grooved underneath, the lower ones on the young plants sometimes broader linear-lanceolate flat 3-nerved and slightly silvery underneath, all obtuse or with a small callous point, 1 to 2 in. long. Racemes spreading, rather loose, secund, 1 to  $1\frac{1}{2}$  in. long, the rhachis minutely pubescent. Pedicels filiform, 1 to 2 lines long. Perianth quite glabrous outside or sprinkled with few hairs, bearded inside to below the middle with short hairs, the tube 3 to 4 lines long, dilated at the base, attenuate and revolute under the globular limb. Hypogynous gland thick, rather broad, semicircular. Ovary glabrous, on a long stipe; style long, clavate under the broad very oblique or lateral stigmatic disk. Fruit glabrous, nearly smooth, rather narrow, the stipes dilated upwards and flattened. Seeds with a narrow wing on the outer edge.

**W. Australia.** Murchison river, Oldfield, Drummond, 6th coll. n. 182.

Var. *brevifolia*. Leaves all under 1 in. long and the racemes short; in one specimen a few of the larger leaves divided into 3 segments.—Murchison river, Oldfield.

Var. *hirtella*. Leaves of the preceding variety, but more or less hirsute with short fine spreading hairs often clustered.—Champion Bay, Walcott; a single specimen in herb. F. Mueller.

2. **G. obtusifolia**, Meissn. in D.C. Prod. xiv. 356. A much-branched shrub, apparently spreading or procumbent, the young branches slightly pubescent with appressed hairs. Leaves oblong-linear or linear-cuneate, obtuse, with recurved or revolute margins, contracted into a short petiole, glabrous and smooth above, silvery-ferruginous underneath, with a prominent midrib. Racemes short, secund, rather loose, the rhachis and pedicels glabrous or nearly so. Pedicels slender, 1 to 2 lines long. Perianth glabrous outside, bearded inside to below the middle with very short hairs, the tube fully 3 lines long, broad at the base, attenuate and revolute under the obliquely globular limb. Hypogynous gland thick, broad, semicircular. Ovary glabrous, on a long stipe. Style long, thickened at the end under the very oblique or lateral stigmatic disk. Fruit above  $\frac{1}{2}$  in. long, nearly smooth, the stipes thickened upwards and flattened.

**W. Australia**, Drummond, 4th coll. n. 278, also n. 10 and 34. The species is very near to and perhaps a variety of *G. pinaster*.

3. **G. sparsiflora**, F. Muell. *Fragn.* vi. 206. A bushy shrub of about 3 ft., with erect branches, the young shoots minutely silky-pubescent, the adult foliage nearly glabrous. Leaves rather crowded, erect, very narrow-linear or almost terete, obtuse or with a small callous point,  $\frac{3}{4}$  to 1 in long, doubly grooved underneath by the thickened margin and midrib. Pedicels in pairs or even solitary, axillary and terminal, 2 to 3 lines long. Perianth glabrous or nearly so, the tube nearly 4 lines long, rather narrow, attenuate and revolute under the globular limb, densely bearded inside about the middle with reflexed hairs. Torus small, straight. Ovary stipitate, glabrous; style long, with an orbicular lateral stigmatic disk.

**W. Australia.** Sand flats near Eyre's Relief, Cape Arid, Maxwell.

4. **G. macrostylis**, F. Muell. *Fragn.* i. 137. A shrub of 4 to 6 ft., very near *G. tripartita*, with the same inflorescence flowers and fruit, but a different foliage. Leaves on short petioles, cuneate at the base, more or less deeply divided into 3 broad triangular or lanceolate pungent-pointed lobes, nearly glabrous and more or less veined above, silvery-silky underneath, the whole leaf usually about 1 in. long and broad. Flowers few in umbel-like axillary or terminal racemes, more or less secund. Perianth above  $\frac{1}{2}$  in. long, entirely as in *G. tripartita* as well as the hypogynous gland and pistil.

**W. Australia.** Eyre's Relief and East Mount Barren, Maxwell. In one specimen the leaves are much narrower and deeply 3 fid, or a few of them linear-lanceolate and entire.

5. **G. tripartita**, Meissn. in *D.C. Prod.* xiv. 373. An erect shrub of 3 to 5 ft., the branches tomentose. Leaves pinnate, with 3 or 5 linear divaricate very rigid and pungent-pointed segments, flat but thick, doubly grooved underneath, glabrous or slightly silky, the whole leaf 1 to  $1\frac{1}{2}$  in. long, the common petiole short. Racemes sessile, few-flowered, terminal or in the upper axils. Pedicels pubescent, 4 to 5 lines long. Perianth slightly pubescent outside and minutely so inside about the middle, the tube rather broad, 7 to 8 lines long, attenuate and revolute under the very oblique usually tomentose limb. Torus slightly oblique, the gland-side uppermost. Hypogynous gland broad, thick, obliquely semicircular. Ovary glabrous on a short stipe; style very long, scarcely thickened under the large lateral stigmatic disk. Fruit hard, 6 to 8 lines long, smooth or with a few prominent tubercles.

**W. Australia**, Drummond, 4th coll. n. 285, Roe; sandy ridges, Phillips river, Maxwell.

6. **G. platypoda**, F. Muell. *Fragn.* vi. 205. A shrub with stout minutely tomentose branches, very angular when young. Leaves shortly petiolate, deeply pinnatifid, with 3 or 5 broadly cuneate mostly 3-lobed segments, all short and pungent-pointed, the whole leaf 1 to 2 in. long and broad, firmly coriaceous, glabrous and shining above, minutely silky underneath, the primary veins prominent. Racemes 2-

to 4-flowered, very shortly pedunculate, several together in terminal or lateral raceme-like panicles of 2 or 3 in., the common rhachis broadly fasciate and flexuous. Pedicels 2 to 3 lines long. Perianth slightly pubescent outside, shortly bearded inside above the middle, the tube 4 to 5 lines long, slightly dilated below the middle, much revolute and attenuate under the globular limb. Torus nearly straight. Gland very prominent, obliquely semicupular. Ovary glabrous, shortly stipitate; style not very long, shortly thickened under the broadly oval lateral stigmatic disk.

**W. Australia.** Stirling range, F. Mueller, a single specimen in herb. F. Mueller. The dilatation of the rhachis of inflorescence may possibly be abnormal.

7. **G. patentiloba**, F. Muell. *Fragm.* i. 137. A spreading shrub of about 4 ft., glabrous or the young shoots minutely silky-pubescent. Leaves mostly twice pinnatifid, with 3 to 7 primary pinnæ, the lower ones with 3 to 5 segments and sometimes some of these again divided, and a few leaves with only 3 to 5 segments altogether, the segments all linear, often short, rigid, divaricate, pungent-pointed, thick but flat, smooth above, doubly grooved underneath, the whole leaf under 2 in. diameter. Racemes 2- to 4-flowered, on very short peduncles but often rather numerous in a raceme-like panicle with a common minutely pubescent rhachis of  $1\frac{1}{2}$  to 3 in. Pedicels 1 to 2 lines long. Perianth pubescent outside and in, the tube broad, about 4 lines long, revolute above the middle and much constricted under the obliquely globular limb. Torus straight or oblique with the gland-side the longest. Gland prominent, oblique. Ovary glabrous, shortly stipitate; style long, slightly thickened under the oblique almost lateral stigmatic disk.

**W. Australia, Drummond; Phillips Range, Maxwell.**

8. **G. pectinata**, R. Br. *Prot. Nov.* 23. A low spreading or procumbent shrub, rarely above 2 ft. high, the young shoots minutely silky-pubescent, the adult foliage glabrous, of a pale colour. Leaves pinnate, with 9 to 11 segments, all approximate and parallel, narrow linear, thick but flat, obtuse or with a small callous point, doubly grooved underneath or on both sides by the prominent margins and midrib, the lower ones of each leaf  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long and regularly diminishing to the end. Racemes very short and loose, simple or rarely branched. Pedicels 2 to 3 lines long. Perianth slightly hoary-pubescent or silky outside, very sparingly bearded inside, the tube  $\frac{1}{2}$  in. long, not very broad at the base, tapering into a revolute neck under the globular limb. Torus nearly straight. Hypogynous gland very prominent, thin, erect, semicupular. Ovary glabrous, on a rather short stipe; style very long, slightly clavate under the lateral stigmatic disk, fruit nearly globular, 4 to 5 lines long, prominently rugose. Meissn. in DC. *Prod. xiv.* 372; *G. etenophylla*, Meissn. l.c.

**W. Australia, Drummond, 5th coll. n. 407; between Lucky Bay and Cape Arid, Baxter; East Mount Barren and Phillips Range, Maxwell.**

9. **G. plurijuga**, F. Muell. *Fragm.* iv. 84. A spreading shrub attaining 5 or 6 ft. in height and 12 ft. diameter, quite glabrous or the young shoots minutely tomentose. Leaves simply pinnate, with 9 to 21 linear-terete rigid but rather slender mucronate segments, mostly  $\frac{3}{4}$  to 1½ in. long, singly or doubly grooved underneath. Flowering branches almost leafless or with simple leaves at the base of the racemes. Racemes loose, secund, 2 to 4 in. long. Pedicels slender, 3 to 4 lines long, glabrous as well as the rhachis. Perianth glabrous but apparently viscid outside, shortly bearded inside at about the middle, the tube 5 to 6 lines long, rather broad in the lower part, attenuate above the middle and much revolute under the obliquely globular limb. Torus straight. Gland semicircular, slightly prominent. Ovary glabrous, very shortly stipitate; style very long, the stigmatic disk lateral. Fruit obliquely ovoid, hard, 7 to 8 lines long.

**W. Australia.** Sand flats, Point Malcolm, *Maxwell*.

10. **G. nudiflora**, Meissn. in *DC. Prod.* xiv. 366. A diffuse prostrate or trailing shrub extending sometimes to several feet, glabrous or the young shoots minutely silky-pubescent. Leaves rather crowded at the base of the branches, undivided, very narrow-linear, rigid but not pungent, doubly grooved underneath by the prominent midrib and margins, varying from under 2 in. to fully 6 in. long. Flowering branches long and leafless, often compressed. Racemes loose but few-flowered, on short distant simple or branched peduncles, the subtending leaves reduced to small scales or entirely deficient. Pedicels 2 to 3 lines long. Perianth red, glabrous outside, bearded inside to below the middle with short hairs, the tube 4 or 5 lines long, rather broad, attenuate and revolute under the globular limb. Torus straight. Gland prominent, semi-annular. Ovary glabrous, rather shortly stipitate; style long, slightly thickened under the very oblique or lateral stigmatic disk. Fruit broad, about ½ in. long, smooth or slightly chagrined.—*G. pedunculosa*, F. Muell. *Fragm.* i. 135.

**W. Australia**, Drummond, 5th coll. n. 406; Upper Kalgan river, Oldfield, F. Mueller; Phillips ranges, Salt and Fitzgerald rivers, *Maxwell*.

11. **G. stenomera**, F. Muell. *Fragm.* iv. 85. A spreading shrub of 4 or 5 ft., the young branches hoary or silvery with a minute tomentum, the adult foliage glabrous. Leaves pinnate, with narrow-linear segments twice as long and not quite so regular as in *G. pectinata*, mostly 1 to 2 in. long, obtuse or mucronate, doubly grooved underneath. Racemes solitary or several in a terminal panicle, spreading, loose, secund, 1½ to 2 in. long, the rhachis and pedicels minutely pubescent or nearly glabrous. Pedicels about 2 lines long in flower, twice as long in fruit. Perianth nearly glabrous outside, bearded inside above the middle, the tube about 3 lines long, dilated in the lower part, attenuate and revolute under the globular limb. Torus straight. Gland broad, thick, semicircular. Ovary glabrous, on a long

stipes. Style long, slightly thickened under the lateral stigmatic disk. Fruit oblong, smooth or slightly rugose, 6 to 8 lines long.

**W. Australia.** Murchison river and near Bunbury, *Oldfield*. This may prove to be a variety of *G. Thelemanniana*, with less divided leaves and a looser inflorescence.

**12. G. Thelemanniana**, *Endl. Nov. Stirp. Dec.* 6. A spreading shrub of 3 to 5 ft., the young branches softly tomentose the foliage glabrous or very slightly silky, of a pale or glaucous hue, not unlike that of some *Artemisiae*. Leaves pinnate with the lower pinnae usually again divided, the segments rather numerous, linear, terete, slender, not pungent, singly or doubly grooved underneath, the whole leaf 1 to 2 in. long. Racemes terminal, spreading, secund, rather dense, 1 to  $1\frac{1}{2}$  in. long, the rhachis tomentose. Flowers pink with green tips. Pedicels 1 to 2 lines long. Perianth sprinkled outside with a few appressed hairs, bearded inside above the middle with short hairs, the tube 3 to  $3\frac{1}{2}$  lines long, somewhat dilated below the middle, attenuate and revolute under the globular limb. Torus straight. Gland broad, semi-orbicular, thick but flat or obscurely 3-lobed. Ovary glabrous, on a long stipe; style long, thickened under the oblique or lateral stigmatic disk. Fruit smooth, 5 or 6 lines long.—Meissn. in DC. Prod. xiv. 372; Baill. Hist. Pl. ii. 389, f. 216; *G. Preissii*, Meissn. in Pl. Preiss. i. 543, ii. 253 and in DC. Prod. xiv. 371; Bot. Mag. i. 5837.

**S. Australia?** Murray Desert near Lake Alexandrina, *Wurth*, a single specimen in herb. F. Mueller. Can it be a cultivated one?

**W. Australia.** Swan river, *Drummond*, n. 69, 1st coll. n. 637, *Preiss*, n. 709, and others; between Swan river and King George's Sound, *Harvey*; King George's Sound, *Fraser*.

I have not seen any typical specimens of the plant originally described by Endlicher from Baron Hügel's garden, but his character agrees well with the common Swan river specimens. Baillon's figure above quoted represents well the foliage and inflorescence, but the enlarged figures 217 and 218 differ both from Endlicher's description and from our specimens in the shape of the perianth, its dense pubescence, and in the very short stipes of the ovary.

**SERIES 2. HEBEGYNÆ.**—Ovary sessile or scarcely stipitate, densely villous. Torus sometimes but very rarely slightly oblique with the gland-side the shortest.

This series differs from *Ptychocarpa* chiefly in the oblong or elongated secund racemes, in the perianth glabrous inside as well as the style, and in the leaves not so constantly entire as in *Ptychocarpa*. The absence or prominence of ribs on the fruit is a character very rarely appreciable. The seeds are in some species more winged than in *Ptychocarpa*, but that appears to be no more than a specific distinction, and can very rarely be ascertained from herbarium specimens.

**13. G. concinna**, *R. Br. in Trans. Linn. Soc. x. 172, Prod. 377, and Prot. Nov. 18.* An erect bushy shrub of several feet, the young branches tomentose hoary or ferruginous. Leaves mostly entire, linear or linear-lanceolate, very shortly mucronate, 1 to 2 in. long, smooth above and glabrous when old, silky-pubescent underneath, but when narrow the under surface concealed by the revolute margins and thick

midrib, and occasionally on young plants a few leaves deeply lobed. Racemes terminal, shortly pedunculate, dense, secund,  $\frac{1}{2}$  to 1 in. long in the typical form. Pedicels very short, silky as well as the rhachis. Perianth silky outside, glabrous inside, the tube  $3\frac{1}{2}$  to 4 lines long, rather broad at the base, much attenuate and revolute under the globular limb. Torus straight. Gland broad, depressed, semilunar. Ovary shortly stipitate, densely villous; style long, glabrous, slightly thickened under the broad oblique stigmatic disk. Fruit acuminate, about  $\frac{1}{2}$  in. long, obscurely ribbed.—Meissn. in DC. Prod. xiv. 367; Sweet, Fl. Austral. t. 7; Bot. Reg. t. 1383; *G. Lemaniana*, Meissn. l.c. 366.

**W. Australia.**, Drummond, 5th coll. n. 405; Lucky Bay, R. Brown, Baxter; Gardiner, Fitzgerald and Phillips ranges, West Mount Barren, Bremer Bay, Maxwell.

Var. *racemosa*. Racemes longer and more erect.—*G. Hewardiana*, Meissn. in DC. Prod. xiv. 366, and *G. coccinea*, Meissn. l.c. 367.—Drummond, 5th coll. n. 404; Mount Manypeak, Preiss, n. 711; Gardiner river, Maxwell.

14. **G. Hookeriana**, Meissn. in Pl. Preiss. i. 546, and in DC. Prod. xiv. 374. An erect shrub of several feet, the branches tomentose. Leaves pinnate, with 3 to 9 very narrow-linear segments, rigid but not pungent, doubly grooved underneath by the revolute margins and prominent midrib, glabrous when full grown, the whole leaf 6 to 8 in. long in some specimens with distant segments of 1 to 2 in., the leaf in other specimens 1 to 2 in. with segments of  $\frac{1}{2}$  to 1 in. Racemes spike-like, dense, erect, secund,  $1\frac{1}{2}$  to 3 in. long, the rhachis tomentose-villous. Pedicels scarcely any. Perianth silky-villous outside, glabrous inside, the tube about 4 lines long, slightly dilated below the middle, attenuate and revolute below the globular limb. Torus straight. Gland broad, horizontally spreading, semiorbicular. Ovary densely villous, contracted at the base but scarcely stipitate; style long, glabrous, the stigmatic disk oblique. Fruit obtusely angular, shortly acuminate, about  $\frac{3}{4}$  in. long.—*G. tetragonoloba*, Meissn. in DC. Prod. xiv. 374.

**W. Australia.**, Drummond, 1st coll. n. 633, 4th coll. n. 282; Gardiner river and Doubtful Island Bay, Oldfield.

Drummond's specimens 6th coll. n. 184, referred here by Meissner, although much resembling *G. Hookeriana* in foliage, have very different flowers and constitute the *G. pinnatisecta*.

15? **G. Baxteri**, R. Br. Prot. Nov. 22. Leaves pinnate, silky on both sides, the segments about 1 in. long, narrow-linear, mucronate. Racemes erect. Perianth and pistil silky. Stigmatic disk dilated, convex, nearly vertical.—Meissn. in DC. Prod. xiv. 372.

**W. Australia.** Cape Arid, Baxter. I have not seen this species, the parcel of R. Brown's collection containing the original specimen could not be found, and I have not met with it in any other set of Baxter's plants. It appears to be very close to *G. Hookeriana*, and perhaps one of its forms, but differing in the silky leaves and vertical stigmatic disk.

16. **G. pterosperma**, F. Muell. in Trans. Phil. Soc. Vict. i. 22, and in Hook. Kew Journ. viii. 208. A shrub of several feet with numerous





erect branches, silky-tomentos when young. Leaves very narrow-linear, erect, entire or rarely divided into 2 or 3 segments, rigid but not pungent, 3 to 6 in. long, doubly grooved underneath, sprinkled with small appressed silky hairs or at length glabrous. Racemes terminal, secund, rather loose, 2 to 4 in. long, the flowers numerous. Pedicels rarely 1 line long, silky-tomentose as well as the rhachis. Bracts membranous and imbricate on the young racemes but falling away very early. Perianth silky-villous outside, glabrous inside, the tube nearly 3 lines long, somewhat dilated below the middle, narrow and revolute under the globular limb. Torus straight. Gland semi-annular, broader and flatter in the western than in the eastern specimens. Ovary distinctly stipitate, villous with long hairs; style glabrous, the stigmatic disk oblique. Fruit nearly globular, densely tomentose, about  $\frac{1}{2}$  in. diameter. Seed-wing rather broad, especially on the outer margin.—Meissn. in DC. Prod. xiv. 384; *G. sericostachya*, Meissn. l.c. (previously named but without diagnosis in Hook. Kew Journ. iv. 186.)

**N. S. Wales.** Near the junction of the Murrumbidgee and the Murray rivers, *F. Mueller*; between the Lachlan and Darling rivers, *Burkitt*.

**Victoria.** Wimmera and Murray Desert, *Dallachy*.

**S. Australia.** Cooper's Creek, *Howitt's Expedition*.

**W. Australia,** *Drummond*, 5th coll. suppl. n. 10, also n. 70.

**17. *G. eriostachya*,** Lindl. *Swan Riv.* App. 36. A stout erect shrub of 3 to 6 ft., the young branches silky-hoary or tomentose. Leaves very narrow-linear, occasionally undivided but mostly pinnate with 3 to 5 long distant segments, rigid but not pungent, doubly grooved underneath, glabrous or very minutely pubescent, 4 to 8 in. long. Racemes terminal, erect, dense, secund, 3 to 6 in. long on short thick tomentose-villous peduncles, and sometimes several on a long leafless branch, but often the floral branches leafy, the whole raceme densely tomentose-villous. Pedicels very short. Bracts membranous, villous, imbricate on the young raceme but falling off very early. Perianth silky-villous outside, glabrous inside, the tube about  $\frac{1}{2}$  in. long, slightly dilated at the base, revolute under the oblique ovoid-globular limb. Torus straight. Gland broad, flat, semi-lunar. Ovary sessile, densely villous; style long, glabrous, slightly clavate under the oblique stigmatic disk. Fruit thick but flattened, oblique, broad,  $\frac{3}{4}$  in. long. Seeds broadly winged all round.—Meissn. in Pl. Preiss. i. 545, and in DC. Prod. xiv. 383.

**W. Australia,** *Drummond*, 1st coll. n. 636, 2nd coll. n. 328, also n. 73; *Murchison river, Oldfield*; *Champion Bay, Walcott*.

*G. pityophylla*, F. Muell. Fragm. vi. 208, described from a mere fragment in Drummond's collection, appears to me to be this species with the leaves entire, the margins more revolute showing only a single groove underneath.

**18. *G. thrysoides*,** Meissn. in *Hook. Kor. Journ.* vii. 77, and in DC. Prod. xiv. 375. Stems apparently decumbent, leafy at the base, slightly tomentose or silky-pubescent. Leaves pinnate, with 6 to 14 pairs of very narrow linear segments, rigid but not pungent, more or

less pubescent-punctate, doubly grooved underneath, the whole leaf 2 to 4 in. long, the segments  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. Flowering stems virgate, leafless, often above 1 ft. long, bearing at the end 1 to 3 shortly pedunculate racemes and several abortive ones lower down. Perfect racemes secund, dense, 2 to 4 in. long, the rachis tomentose-villous. Pedicels very short. Bracts ovate or lanceolate, imbricate on the young raceme but falling off very early. Perianth rather loosely silky-villous outside, glabrous inside, the tube about 4 lines long, broad and almost gibbous at the base, narrow from the middle, revolute under the globular limb. Torus straight. Gland broad, horizontal, semi-lunar. Ovary densely villous on a distinct stipe; style long, more or less bearded, shortly thickened under the oblique stigmatic disk. Fruit unknown.

**W. Australia.** Between Dundagaran and Smith river, *Drummond*, 6th coll. n. 183.

19. **G. chrysodendron**, *R. Br.* in *Trans. Linn. Soc.* x. 176, *Prod.* 379. A tree of 15 to 20 ft., the young branches tomentose. Leaves pinnate with numerous very narrow linear segments of 4 to 8 in. the lower ones sometimes forked, the rachis angular, 6 in. to 1 ft. long, the segments silky underneath, becoming glabrous above, rarely rather broader and veined, the margins revolute. Racemes erect, terminal or in the upper axils, rather dense, secund, 3 to 5 in. long. Flowers yellow. Pedicels 1 to 2 lines long, tomentose-villous as well as the rachis. Perianth pubescent or villous outside, glabrous inside, the tube not broad, scarcely 3 lines long, slightly contracted and much revolute under the globular limb. Torus straight. Gland almost or quite divided into two, broad and short. Ovary sessile, villous; style long, the stigmatic disk oblique or lateral, with a prominent central umbo. Fruit obliquely ovate-oblong, compressed, about  $\frac{3}{4}$  in. long. Seedwing surrounding the nucleus, but narrow.—Meissn. in DC. *Prod.* xiv. 383; *G. pteridifolia* Knight, *Prot.* 121; *G. Mitchellii*, Hook. in *Mitch. Trop. Austral.* 265; Meissn. l.c.

**N. Australia.** Islands of the Gulf of Carpentaria, *R. Brown*; Victoria river, *Bynoe*, *P. Mueller*; Port Essington, *Armstrong*; Port Darwin, *Schulz*; Melville island, *Fraser*, and other points of the N. coast, *A. Cunningham*, and others.

**Queensland.** Endeavour river, *R. Brown*; Rockingham Bay, *Dallachy*; Mistake Creek, *Fitzalan*; Cape river, *Bowman*; Brigalow scrub on the Belyando, *Mitchell*.

Meissner distinguishes two species amongst Mitchell's specimens, differing chiefly in the breadth of the perianth-tube and in the degree of obliquity of the stigmatic disk, differences which however I have failed to appreciate in the specimens quoted.

20. **G. Banksii**, *R. Br.* in *Trans. Linn. Soc.* x. 176, *Prod.* 379. A tall shrub or slender tree of 15 to 20 ft. the branches and inflorescence softly ferruginous-tomentose. Leaves deeply pinnatifid or pinnate, with 3 to 11 broadly linear or lanceolate segments, obtuse or mucronate, with recurved margins, 2 to 4 in. long, glabrous above, silky-ferruginous underneath, the midrib alone prominent or obscurely pinniveined, the whole leaf 4 to 8 in. long and here and there a smaller leaf undivided. Racemes terminal, erect, dense, secund, 2 to 4 in. long, solitary or 2 or 3

on a terminal leafless peduncle. Flowers red. Pedicels 3 to 4 lines long, tomentose as well as the rhachis. Perianth tomentose outside, glabrous inside, the tube not very broad, 6 or 7 lines long, contracted and revolute under the limb. Torus straight or nearly so. Gland prominent, semiannular, more or less lobed or jagged. Ovary sessile, densely villous; style long and glabrous, clavate under the very oblique or lateral convex stigmatic disk. Fruit obliquely ovate, compressed, almost acute, about 1 in. long.—Meissn. in DC. Prod. xiv. 375; Bauer, Illustr. t. 9.

**Queensland.** Broad Sound, Keppel and Shoalwater Bays, *R. Brown*; open barren hills, upper Brisbane river, *A. Cunningham*; Rockhampton, *Thozet*; head of Cape river, *Bowman*; Wide Bay, *Bidwill*; Keppel Bay, *O'Shauesy*; mouth of Fitzroy river, *C. Haynes*; Facing Island, *W. Hill*.

21. **G. Caleyi**, *R. Br. Prot. Nov. 22*. A slender shrub of 5 or 6 ft., the branches petioles and inflorescence densely villous with soft spreading ferruginous hairs. Leaves deeply pinnatifid or pinnate with numerous (above 20) oblong-linear divaricate segments, obtuse or mucronate, with recurved margins, glabrous above, softly villous underneath,  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. long but very regular on the same leaf, the whole leaf 3 to 6 in. long. Racemes terminal or in the upper axils, erect, rather dense, secund, shortly pedunculate,  $1\frac{1}{2}$  to 2 in. long. Pedicels 1 to 2 lines long. Perianth pubescent or villous outside, glabrous inside, the tube about 3 lines long, slightly dilated at the base, contracted and revolute under the ovoid limb. Torus straight. Gland semicircular, not very prominent. Ovary shortly stipitate, villous; style long, glabrous, shortly thickened under the oblique umbonate stigmatic disk. Fruit broadly falcate, slightly compressed,  $\frac{3}{4}$  in. long, villous but the concave edge marked with longitudinal glabrous lines.—Meissn. in DC. Prod. xiv. 375; Bot. Mag. t. 3133; *G. blechnifolia*, A. Cunn. Herb.

**N. S. Wales.** Port Jackson, *Caley*, *A. Cunningham*.

22. **G. asplenifolia**, *Knight Prot. 120*. A tall shrub or small slender tree of 12 to 15 ft., the branches minutely silky-pubescent when very young. Leaves lanceolate or linear-lanceolate, mucronate-acute, entire acutely toothed or pinnatifid with short broad acute lobes, contracted into a short petiole, 4 to 10 in. long, glabrous and more or less distinctly pinniveined above, silky-silvery or fulvous underneath, the midrib alone prominent. Racemes sessile or shortly pedunculate, terminal or in the upper axils, secund, 1 to 2 in. long. Pedicels scarcely 1 line long, minutely tomentose as well as the rhachis. Perianth silky-pubescent outside, glabrous inside, the tube narrow, 4 or 5 lines long, revolute under the obliquely globular limb. Torus straight or nearly so. Gland semiannular, not very prominent. Ovary shortly stipitate, villous; style long, glabrous; stigmatic disk oblique, convex.—*R. Br.* in Trans. Linn. Soc. x. 175, Prod. 379; Meissn. in DC. Prod. xiv. 376; *G. longifolia*, *R. Br. Prot. Nov. 22*; Meissn. l.c.

**N. S. Wales.** Port Jackson to the Blue Mountains, *Caley*, *A. Cunningham*, *Fraser*, and others; Sydney woods, Paris Exhibition, 1855, *M'Arthur*, n. 181.

23. **G. cirsifolia**, Meissn. in *Pl. Preiss.* ii. 253, and in *DC. Prod.* xiv. 376. Stems prostrate, not much branched, silky-tomentose. Leaves linear or lanceolate, 3 to 6 in. long, entire remotely toothed or pinnatifid, the teeth or lobes short and falcate or rarely longer and lanceolate, glabrous above when full grown, silky underneath. Racemes lateral or axillary, loose, secund, shortly pedunculate, 2 to 3 in. long, the rhachis pedicels and perianths silky and often fulvous. Bracts small, often persistent. Pedicels 1½ to 3 lines long. Perianth glabrous inside, the tube scarcely dilated at the base, revolute above the middle and the 2 lower segments there dilated into broad semiorbicircular horizontally spreading appendages, forming a broad disk entirely concealing the revolute globular limb. Torus straight. Gland obsolete. Ovary sessile or nearly so, densely villous with long fulvous hairs; style glabrous, thick but flattened; stigmatic disk lateral, thick, the stigma on a prominent central point. Fruit very oblique, ovoid, about 4 lines long.

**W. Australia**, Drummond, 3rd coll. n. 267. The curious form of the perianth is quite anomalous in the genus.

24. **G. laurifolia**, Sieb. in *Roem. and Schult. Syst.* iii., Mant. 279 and in *Spreng. Syst. Cvr. Post.* 45. A procumbent or trailing shrub, the young branches minutely silky-tomentose. Leaves petiolate, ovate oblong or broadly lanceolate, obtuse or mucronate, entire, rounded or cuneate at the base, 2 to 5 in. long, glabrous above, closely silky underneath, the primary veins nearly parallel and arching into an intramarginal nerve but not quite so regular as in *G. Goodii*, and the reticulate veinlets scarcely conspicuous. Racemes terminal or lateral, shortly pedunculate, secund, rather dense, 1 to 1½ or rarely 2 in. long. Pedicels 1 to 2 lines long, closely ferruginous-tomentose as well as the rhachis. Perianth slightly hairy outside, glabrous inside, the tube obliquely dilated at the base, about 4 lines long, attenuate and revolute under the globular limb. Torus straight. Gland prominent, semiannular. Ovary stipitate, villous; style long, glabrous; stigmatic disk oblique, umbo-nate.—R. Br. Prot. Nov. 17; Meissn. in *DC. Prod.* xiv. 352; *G. humifusa*, A. Cunn. Herb.

**N. S. Wales**. Blue Mountains, Caley, Sieber, n. 26, A. Cunningham, Fraser, Woolls. In habit and foliage this species resembles *G. Goodii*, but the flowers are very different.

25. **G. Barklyana**, F. Muell. (*ined.?*). A shrub, probably tall, the young branches hoary-tomentose or ferruginous-silky. Leaves either oblong-lanceolate entire and 4 to 8 in. long, or pinnatifid with 3 to 7 triangular or broadly lanceolate lobes often above 1 in. long and the whole leaf 6 to 10 in. long, penniveined, glabrous above, ferruginous or hoary-tomentose underneath. Racemes nearly sessile, dense, secund, 2 to 3 in. long, terminal or at length lateral. Pedicels exceedingly short, tomentose as well as the rhachis. Perianth pubescent outside, glabrous inside, the tube scarcely dilated at the base, about 3 lines long, revolute under the globular limb. Torus straight. Gland semiannular, scarcely

prominent. Ovary very shortly stipitate, villous; style long, glabrous, the stigmatic disk slightly oblique, convex. Fruit acuminate, not  $\frac{1}{2}$  in. long.

**Victoria.** Ranges on the upper Tarwan and Banyip rivers, F. Mueller. I have been unable to discover where F. Mueller has published this species.

26. **G. repens**, F. Muell. in Linnaea, xxvi. 355. A prostrate shrub, spreading to a great extent, the young branches slightly pubescent. Leaves glabrous or sprinkled underneath with appressed hairs, very shortly petiolate, from broadly ovate to oval-oblong, cordate truncate or cuneate at the base, bordered by short prickly teeth, the margins often undulate but not recurved, pinniveined with the primary veins prominent underneath,  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. long when broad or twice as long when narrow. Racemes terminal or on short axillary branches, shortly pedunculate, secund, 1 to 2 in. long. Pedicels 1 to 2 lines long. Perianth silky-pubescent outside, glabrous inside, the tube 3 to  $3\frac{1}{2}$  lines long, somewhat dilated below the middle, revolute under the globular limb. Torus slightly oblique. Gland semicircular, thick and rather broad. Ovary villous, on a stipe as long as itself; style long, glabrous, the stigmatic disk very oblique, with a central umbo or small cone.—Meissn. in DC. Prod. xiv. 377.

**Victoria.** Goulburn ranges, Watts and Loddon rivers, F. Mueller.

27. **G. aquifolium**, Lindl. in Mitch. Three Exped. ii. 178. A shrub of several ft., the branches more or less tomentose or villous. Leaves petiolate, ovate ovate-lanceolate or oblong, undulate and prickly-toothed or pinnatifid with short pungent-pointed lobes, cuneate or truncate at the base, 1 to 3 in. long, rigid and veined, sometimes nearly glabrous but more frequently pubescent above and silky or softly villous underneath, and often ferruginous. Racemes terminal or on short axillary branches, nearly sessile, dense, secund, 1 to 2 in. long. Pedicels very short, villous as well as the rhachis. Perianth villous outside, glabrous inside, the tube about 4 lines long, dilated below the middle, attenuate and revolute under the globular limb. Torus nearly straight; gland semiannular. Ovary densely villous on a very short stipe; style long, glabrous; stigmatic disk slightly oblique with a central umbo.—Meissn. in DC. Prod. xiv. 378; *G. variabilis* Lindl. in Mitch. Three Exped. ii. 179; Meissn. l.c.; *G. induta*, F. Muell. First Gen. Rep. 17.

**Victoria.** Grampians, Mitchell, F. Mueller; Wimmera, Dallachy; near Bridgewater Bay, Robertson; Portland, Allitt.

28. **G. ilicifolia**, R. Br. Prot. Nov. 21. A large spreading shrub attaining 6 ft. or more though often much smaller, the branches more or less silky or hoary-pubescent. Leaves in the typical form cuneate, undulate prickly-toothed and lobed at the end, with a long tapering base, the whole leaf 1 to 2 in. long, but sometimes longer and deeply pinnatifid with narrow lobes, more rarely pinnatifid with short lobes from near the base almost as in *G. aquifolium*, or as broad as long and once or twice 3-lobed, the lobes or teeth always rigid and pungent-pointed, glabrous and veined above, more or less silky underneath. Ra-

comes terminal, secund, 1 to 2 in. long, the rhachis and pedicels silky-pubescent or villous. Pedicels about 1 line long. Bracts sometimes persistent. Perianth villous outside, glabrous inside, the tube about 4 lines long, revolute under the limb. Torus nearly straight. Ovary stipitate, villous; style long, glabrous; stigmatic disk oblique. Fruit oblique, acuminate, about  $\frac{1}{2}$  in. long.—Meissn. in DC. Prod. xiv. 377; *Anadenia ilicifolia*, R. Br. in Trans. Linn. Soc. x. 167, Prod. 375; *G. Behrii*, Schlecht. in Linnaea, xx. 585.

**Victoria,** Harvey; Forest Creek, Mount Corong, Station Peak, F. Mueller.

**S. Australia.** Port Lincoln, R. Brown; Kangaroo Island, Baxter, Waterhouse; Spencer's Gulf, F. Mueller.

Var. *lobata*. Leaves with lanceolate or rarely linear lobes, and often again lobed.—*G. lobata*, F. Muell. in Trans. Phil. Soc. Vict. i. 22, and in Hook. Kew Journ. viii. 207; Meissn. in DC. Prod. xiv. 379. *G. dumetorum*, Meissn. l.c. 378.—N. W. Victoria, L. Morton, Dallachy, and others; Grampians, Mitchell; Murray Desert, F. Mueller; Tatiara country, Woods.

29. **G. Gaudichaudii**, R. Br. in Gaudich. Freye. Voy. Bot. 443. t. 46; Prot. Nov. 22. An erect shrub with the habit inflorescence and flowers of *G. acanthifolia*, of which it may be a variety with less divided and less prickly leaves. Branches slightly silky-pubescent when young, but soon becoming glabrous. Leaves deeply pinnatifid, the lobes oblong or ovate, all entire and pungent-pointed, or the terminal one or sometimes the lateral ones also cuneate with 2 or 3 pungent-pointed teeth or short secondary lobes, the whole leaf 2 to 4 in. long and the lower lobes sometimes above 1 in., glabrous above, more or less distinctly pinniveined, with the primary veins confluent in an intra-marginal nerve, paler underneath and often sprinkled with appressed hairs. Racemes terminal, secund, silky-villous, entirely as in *G. acanthifolia*, with the same perianth, nearly sessile densely villous ovary, long glabrous style and oblique stigmatic disk.—Meissn. in DC. Prod. xiv. 377.

**N. S. Wales.** Blue Mountains, Gaudichaud, A. Cunningham, Fraser.

30. **G. acanthifolia**, A. Cunn. in Field. N. S. Wales, 328 with a plate. An erect or straggling shrub of several ft., glabrous except the inflorescence. Leaves deeply pinnatifid; lobes or segments usually 9 to 15 but sometimes more or fewer, either cuneate and 3- to 5-lobed or the upper ones lanceolate and entire, all rigid, pungent-pointed, green on both sides, the whole leaf 1½ to 3 in. long, the lobes or segments in some specimens all under  $\frac{1}{2}$  in., in others  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long. Racemes terminal or in the upper axils, sessile or shortly pedunculate, dense, secund, 2 to 4 in. long. Pedicels exceedingly short, densely villous as well as the rhachis. Bracts broad, villous, membranous, imbricate on the young spike and sometimes persisting till the flowers expand. Perianth pink, silky-villous outside, glabrous inside, the tube 4 to 5 in. long, slightly dilated below the middle, contracted and revolute under the globular limb. Torus nearly straight. Gland semi-annular, not very prominent. Ovary nearly sessile, densely villous with long silky hairs; style long, glabrous; stigmatic disk oblique, convex.—R. Br. Prot. Nov. 22;

Meissn. in DC. Prod. xiv. 377; Bot. Mag. t. 2807; Lodd. Bot. Cab. t. 1153; Lindl. and Paxt. Fl. Gard. iii. 103, f. 281.

**N. S. Wales.** Blue Mountains, *A. Cunningham*, *Fraser*, *Sieber*, n. 32, and others.

Var. *stenomera*, F. Muell. Prostrate; leaf-lobes linear-lanceolate.—Head of Macleay river, *C. Moore*.

31. **G. bipinnatifida**, R. Br. *Prot. Nov.* 23. A diffuse or prostrate shrub of 3 or 4 ft., the branches tomentose-pubescent with appressed hairs. Leaves broad, deeply pinnatifid or pinnate; lobes or segments 9 to 21, either oblong or cuneate or again pinnatifid with triangular or lanceolate pungent-pointed lobes, the whole leaf usually 3 to 4 in. long and 2 to 3 in. broad, rather rigid, the upper surface glabrous and reticulate, the lower sprinkled with a few hairs or glabrous, the primary veins alone prominent. Racemes loose, secund, usually 2 to 4 in. long, solitary or several in a terminal panicle, the rachis ferruginous-tomentose. Pedicels 3 to 5 lines long. Perianth red, silky-pubescent outside, glabrous inside, the tube 7 to 8 lines long, dilated and somewhat gibbous below the middle, attenuate and revolute under the globular limb. Torus straight. Gland obovate or orbicular, convex, horizontally spreading. Ovary sessile or nearly so, shortly villous; style very long, glabrous, slightly clavate under the broad oblique stigmatic disk.—Meissn. in Pl. Preiss. i. 541, and in DC. Prod. xiv. 376.

**W. Australia.** Swan river, *Fraser*, *Drummond*, 1st coll. n. 632, *Preiss*, n. 707, 708; Harvey and Blackwood rivers, *Oldfield*.—In some specimens the raceme is much elongated and very loose, but not constituting a distinct variety.

32. **G. armigera**, Meissn. in DC. Prod. xiv. 373. A stout shrub the branches softly tomentose, the foliage scabrous-punctate. Leaves once twice or three times divided into narrow-linear rigid divaricate pungent-pointed segments, doubly grooved underneath, rather thicker and broader than in *G. asparagooides*, the whole leaf 1 to 2 in. diameter. Racemes terminal, sessile, dense, secund, about 2 in. long, the rachis tomentose. Pedicels exceedingly short or scarcely any. Perianth silky-villous outside, glabrous inside, the tube about 3 lines long, much dilated and almost gibbous below the middle, attenuate and revolute under the globular limb. Torus straight. Gland broadly ovate, spreading. Ovary nearly sessile, densely villous; style long, glabrous, slightly thickened under the oblique stigmatic disk. Young fruit globular.

**W. Australia**, *Drummond* (2nd coll.?), n. 164, 4th coll. n. 284; Plantagenet and Stirling Ranges, *Maxwell*.

33. **G. asparagooides**, Meissn. in DC. Prod. xiv. 373. A divaricately branched or prostrate intricate shrub of several ft., the branches tomentose, the foliage minutely pubescent or glabrous. Leaves once twice or three times ternately divided into rigid divaricate pungent-pointed segments, very narrow linear and doubly grooved underneath, the whole leaf 1 to 2 in. diameter. Racemes terminal, loose, secund, rarely above 1 in. long, the rachis and pedicels shortly hirsute and glandular-viscid.

Pedicels about 2 lines long. Perianth pubescent or hirsute outside, glabrous or nearly so inside, the tube 4 to 5 lines long, dilated or somewhat gibbous at the base, attenuate and revolute under the globular limb. Torus straight. Gland horizontal, convex, semi-annular, not broad, sometimes 3-crenate. Ovary sessile or nearly so, villous; style long, glabrous, slightly clavate under the oblique stigmatic disk. Fruit ovoid, acuminate, 7 to 8 lines long.

**W. Australia.**, *Draemond*, (2nd coll.?) n. 165, 4th coll. n. 283; Salt river and Phillips Range, *Maxwell*.

**SECT. 2. PTYCHOCARPA.**—Racemes short, often umbel-like and not at all or scarcely secund. Perianth-tube dilated below the middle and usually opening on the lower side, the segments otherwise long-eclipting, attenuate and revolute above the middle. Torus small, straight or nearly so. Style hirsute ciliate or tomentose. Ovary sessile or very shortly stipitate, densely villous or rarely glabrous except a tuft of hairs at the base on the upper side. Stigmatic disk lateral. Leaves entire with revolute margins.

This section differs from the *Hebegynæ* series of *Eugrevillea* chiefly in the inflorescence, in the perianth more or less bearded or hirsute inside as well as the style, and in the leaves which appear never to break out into teeth or lobes as they do constantly or occasionally in all the species of that series. The section is usually distinguished by the ribbed fruit, but the ribs are often very obscure, and quite disappear in several species otherwise inseparable from the group.

**34. G. floribunda**, R. Br. *Prot. Nov.* 19. An erect or spreading shrub "not exceeding 5 ft." the branches ferruginous-tomentose. Leaves nearly sessile, oval or oblong, obtuse or with a small callous point, the margins recurved or revolute,  $\frac{3}{4}$  to nearly 2 in. long, villous when young, minutely pubescent above and silky-tomentose underneath when full-grown, sometimes faintly pinniveined. Racemes terminal, sessile or shortly pedunculate and often 1 in. long, the rhachis and flowers very densely villous with ferruginous hairs. Pedicels 1 to 2 lines long. Perianth bearded inside about the middle, the tube from about 3 lines to above 4 lines long, broad and gibbous at the base, attenuate and much revolute above the middle, the limb globular and obtuse. Torus nearly straight. Gland horizontal, broad, not very prominent. Ovary sessile, densely villous; style not very long, villous, thick; stigmatic disk lateral. Fruit about  $\frac{1}{2}$  in. long, slightly ribbed.—Meissn. in DC. Prod. xiv. 361; *G. sphaecleta*, A. Cunn. *Herb.*; *G. autumnalis*, Lhotzk. MSS. (Meissner); *G. chrysophana*, F. Muell. First Gen. Rep. 17; Meissn. in Linnaea, xxvi. 357, and in DC. Prod. xiv. 361; *G. ferruginea*, Grah. in Maund, Botanist, t. 153, not of Sieber.

**N. S. Wales.** Goulburn and Hunter rivers, A. Cunningham, Fraser; ravines near Mount Owen and Mount Clift, Mitchell.

**Victoria.** Avon, Macalister and Latrobe rivers, Stieglitz; Station Peak, F. Mueller; Geelong, Dallachy.

**35. G. cinerea**, R. Br. in *Trans. Linn. Soc.* x. 173, *Prod.* 378. A tall shrub, the branches tomentose-villous. Leaves obovate or









broadly oblong in the typical form, mucronate-acute, the margins recurved, contracted into a very short petiole,  $\frac{3}{4}$  to above 1 in. long, scarious-punctate and more or less distinctly veined above, densely silky-tomentose and hoary or ferruginous underneath. Racemes terminating short leafy branches, umbel-like with few rather large flowers. Pedicels 1 to 2 lines long. Perianth densely villous outside, the shorter segments scantily bearded inside below the middle, the tube nearly 6 lines long, not very broad, contracted and revolute under the oblique obtuse limb. Torus nearly straight. Gland semi-annular. Ovary sessile, villous; style long, more or less ciliate, channelled at the base; stigmatic disk lateral.—Meissn. in DC. Prod. xiv. 358, partly.

**N. S. Wales.** Port Jackson, R. Brown; on the road to Illawarra, A. Cunningham; Blue Mountains, Fraser.

Var. *angustifolia*. Leaves mostly narrow-oblong.—*G. attenuata*, A. Cunn. Herb.—Towards Hunter's river, A. Cunningham.

As observed by Meissner this species is near to *G. mucronulata*, but appears to me to be constantly distinct in the densely villous perianth. The specimens therefore specially described by Meissner under the name of *G. cinerea* would belong to the true *G. mucronulata*. Meissner was enabled to take only a very cursory glance over R. Brown's own set of *Proteaceæ*, and not sufficient to verify with precision any critical species.

*Lysanthe stylosa*, Knight, Prot. 117 (*Grevillea stylosa*, Stev. Nom. Bot. ed. 2), is probably either this species or *G. montana*.

36. **G. alpina**, Lindl. in Mitch. Three Exped. ii. 179. A much-branched shrub, erect spreading or diffuse, densely tomentose or villous with spreading hairs. Leaves rather crowded, sessile or nearly so, oval, oblong-lanceolate or almost linear, obtuse or with a small point, the margins revolute, all under  $\frac{1}{2}$  in. long in some specimens, but sometimes attaining 1 in., hirsute or rarely scarious only above, silky-villous underneath. Racemes very short, terminal, sessile. Pedicels 2 to 4 lines long, pubescent or villous as well as the rhachis. Perianth villous outside, bearded inside to below the middle, the tube from under 4 lines to above 5 lines long, broad and obliquely gibbosus at the base on the upper side, attenuate and much revolute above the middle, the limb ovoid-globular, obtuse or very shortly acuminate. Torus nearly straight. Gland very prominent projecting almost horizontally into the gibbosity of the perianth. Ovary sessile, densely villous; style densely villous; stigmatic disk lateral, slightly umbo-nate. Fruit about  $\frac{1}{2}$  in. long.—Meissn. in DC. Prod. xiv. 360; *G. oreophila* and *G. Dallachiana*, F. Muell. First Gen. Rep. 17; *G. alpestris*, Meissn. l.c. 361; Bot. Mag. t. 5007.

**Victoria.** Mount William in the Grampians, Mitchell; Mount Disappointment, Buffalo ranges, Upper Yarra and Ovens ranges, F. Mueller.

The variations in the foliage and indumentum do not sufficiently correspond with those in the size of the perianth or in the obtuseness of its limb to admit of the establishing two distinct forms as proposed.

37. **G. montana**, R. Br. in Trans. Linn. Soc. x. 172, Prod. 368. A spreading shrub, the branches densely tomentose or villous with

spreading hairs. Leaves shortly petiolate, oblong or lanceolate, obtuse with a small callous point, the margins recurved, contracted at the base,  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. long, glabrous seaceous or slightly hairy above and often veined, densely silky-tomentose and usually ferruginous underneath. Racemes terminal, sessile, short and umbel-like, few-flowered. Perianth as large as in *G. ciliarea* but nearly glabrous outside, the tube not very broad, fully  $\frac{1}{2}$  in. long, revolute and attenuate under the ovoid acuminate limb. Torus nearly straight. Gland semi-annular, slightly prominent. Ovary sessile, densely villous; style long, more or less tomentose and hirsute with short hairs.—Meissn. in DC. Prod. xiv. 358; *G. ferruginea*, Sieb. in Roem. and Schult. Syst. iii. Mant. 280; R. Br. Prot. Nov. 19; Meissn. l.c. 359.

**N. S. Wales.** Blue Mountains, R. Brown, Sieber, n. 27; on the Bulga road, A. Cunningham; Bent's Basin, Woolls; Harper's Hill, Hunter's river, Backhouse (with shorter points to the perianth-limb); Illawarra, Shepherd (no perianths to the specimens and the determination doubtful). The degree of acumination of the perianth-limb is variable in this as in *G. arenaria*, from which this species differs chiefly in the indumentum of its various parts and in its larger flowers.

38. **G. obtusiflora**, R. Br. Prot. Nov. 19. A spreading shrub, the branches tomentose. Leaves oblong or lanceolate, obtuse or with a small often recurved point, the margins revolute, contracted at the base and sometimes shortly petiolate,  $\frac{1}{2}$  to 1 in. long, the upper surface at first pubescent but becoming glabrous, the under side silky-tomentose. Racemes terminal, short, sessile, the rhachis and pedicels pubescent. Perianth sprinkled with appressed hairs, the tube not very broad, much revolute above the middle, the limb very obliquely globular, obtuse. Torus nearly straight. Gland semi-annular, slightly prominent. Ovary sessile, densely villous; style hirsute, not very long.—Meissn. in DC. Prod. xiv. 359.

Queensland? Wide Bay, Bidwill, but possibly some mistake in the station.

**N. S. Wales.** Brushy hills, North of Bathurst, A. Cunningham.—The species appears to be very close to *P. montana*, but with a very obtuse perianth limb. The specimens seen are however not good.

39. **G. arenaria**, R. Br. in Trans. Linn. Soc. x. 172, Prod. 378. An erect shrub of about 6 ft., the branches densely tomentose. Leaves shortly petiolate, obovate-oblong to narrow oblong, obtuse with a very small point, the margins recurved,  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. long, minutely hoary-tomentose and scarcely veined on the upper side, densely tomentose and often ferruginous underneath. Racemes terminal, short, umbel-like and few-flowered, mostly reflexed. Pedicels 1 to 2 lines long. Perianth densely tomentose or pubescent outside in the typical form, bearded inside to below the middle, the tube about 5 lines long, rather broad at the base, much revolute from the middle upwards, contracted under the ovoid acuminate limb. Torus nearly straight. Gland semi-annular, slightly prominent. Ovary sessile, villous; style long, tomentose but not hirsute as in several of the allied species; stigmatic disk lateral. Fruit fully  $\frac{1}{2}$  in. long.—Meissn. in DC. Prod. xiv. 358; Bot. Mag. t. 3285; *Lysanthe cana*, Knight, Prot. 117.



Fl. 3. 1773. 2nd



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**N. S. Wales.** Nepean river, *R. Brown*; near Goulburn, *Backhouse*; Shoalhaven gullies, *C. Moore*; Sidmouth Valley and Lachlan river, *Woolss*.

Var. *canescens*. Perianth more villous, the points to the laminae longer.—*G. cinerea*, A. Conn. in Field, N. S. Wales, 329, not of R. Br.; *G. canescens*, R. Br. Prot. Nov. 18; Meissn. in DC. Prod. xiv. 359; Bot. Mag. t. 3185.—North of Bathurst, *A. Cunningham*, *Fraser*; Macquarie river, *Bowman*.

The species differs from *G. montana* chiefly in habit and indumentum.

40. **G. mucronulata**, *R. Br.* in *Trans. Linn. Soc.* x. 173, *Prod.* 378. A large shrub with rather slender hirsute branches. Leaves shortly petiolate, ovate in the typical form and either rounded at the end with a fine point in the centre, or tapering into a fine point, flat or with recurved margins, mostly about  $\frac{1}{2}$  in. long, pubescent and obscurely or distinctly veined above, silky-tomentose and sometimes ferruginous underneath, with the midrib alone prominent. Racemes short, loose, few-flowered, on slender terminal or axillary peduncles often longer than the leaves. Pedicels 1 to 2 lines long, silky-pubescent or hirsute as well as the rhachis. Perianth sprinkled with appressed hairs outside, the shorter segments slightly bearded inside below the middle, the tube about 5 lines long, rather broad, gibbous at the base, revolute above the middle and attenuate under the very oblique obtuse limb. Torus nearly straight. Gland semi-annular. Ovary sessile, villous; style long, more or less ciliate; stigmatic disk lateral, large.—Meissn. in DC. Prod. xiv. 357; Sweet Fl. Austral. t. 38; *Lysanthe podalyriæfolia*, Knight, Prot. 117; *G. podalyriæfolia*, Sw. in Steud. Nom. Bot. ed. 2; *G. cinerea*, Lodd. Bot. Cab. t. 857; Meissn. l.c. partly not of R. Br.; *G. myrtacea*, Sieb. in Roem. and Schult. Syst. iii. Mant. 280, and in Spreng. Syst. Cur. Post. 46; *G. acuminata*, Sw. Fl. Austral. t. 55.

**N. S. Wales.** Port Jackson to the Blue Mountains, *R. Brown*, *Sieber*, n. 39, and others. The typical form in Brown's herbarium and from Hunter's river, *A. Cunningham*, and represented in Sweet's plate, n. 38, has most of the leaves rounded at the ends and shortly mucronate, with only a few of the leaves acuminate and tapering in a fine point; in Sieber's and other specimens, including those represented in Sweet's plate 55, the majority are thus acuminate, but not so narrow as in Brown's typical *G. acuminata*.

Var. *angustifolia*. Leaves mostly lanceolate-acuminate with a fine point,—*G. acuminata*, R. Br. in *Trans. Linn. Soc.* x. 173, *Prod.* 378; Meissn. in DC. Prod. xiv. 358, as to R. Brown's plant, but not as to A. Cunningham's, which is a var. of *G. cinerea*.—Hunter's river, *R. Brown*.

The six preceding species appear very much to run into each other.

41. **G. Baueri**, *R. Br.* in *Trans. Linn. Soc.* x. 173, *Prod.* 378, *Prot.* Nov. 19. A bushy shrub attaining several ft. the branches more or less pubescent. Leaves rather crowded, sessile, oblong, narrow or broad, obtuse, scarcely contracted at the base, the margins recurved,  $\frac{1}{2}$  to 1 in. long, glabrous and 1-nerved on both sides or rarely sprinkled with a few short hairs, obscurely reticulate above, paler and sometimes penniveined underneath. Racemes very short and umbel-like, sessile on short leafy branches. Pedicels slender, glabrous, about 3 lines long. Perianth greenish yellow or tinged with red, glabrous outside,

bearded inside at or below the middle with reflexed hairs, the tube about 4 lines long, broad in the lower part, much revolute and attenuate under the very oblique limb. Torus slightly oblique. Gland broad, thick, semicircular. Ovary sessile; densely hirsute; style long, ciliate, rather thick, channelled on the upper side; stigmatic disk lateral.—Meissn. in DC. Prod. xiv. 357; *G. pubescens*, Hook. Exot. Fl. t. 216; Lodd. Bot. Cab. t. 1229; *G. daphnoides*, Sieb. in Roem. and Schult. Syst. iii. Mant. 281; *G. myrtillifolia*, A. Cunn. Herb.

**N. S. Wales.** Port Jackson to the Blue Mountains. *R. Brown*, *Siber*, n. 25, and *Fl. Mixt.* n. 478; near Bathurst, *Fraser*; Camden and Argyle Counties, *A. Cunningham*.

Var. *pubescens*. Leaves usually narrow, pubescent above, silky underneath.—Shoalhaven, *Wools*. These specimens are much more densely pubescent than the garden ones on which *G. pubescens* was founded, which are sprinkled only with a few hairs.

42. **G. lanigera**, *A. Cunn.* in *R. Br. Prot.* Nov. 20. Branches densely tomentose or villous. Leaves crowded, sessile or nearly so, linear, obtuse, with revolute margins, mostly about  $\frac{1}{2}$  in. long, rather thick, pubescent above, silky-tomentose underneath. Racemes terminal, short but rather loose, sessile or shortly pedunculate, quite glabrous. Pedicels 1 to 2 lines long. Perianth glabrous outside, the shorter segments bearded inside about the middle, the tube about 4 lines long, broad and somewhat gibbous at the base, much revolute and attenuate under the very oblique limb. Torus straight. Ovary almost sessile, densely villous; style long, ciliate; stigmatic disk lateral. Fruit 5 or 6 lines long.—Meissn. in DC. Prod. xiv. 363.

**N. S. Wales.** Camden and Argyle Counties, Lachlan and Murrumbidgee rivers, *A. Cunningham*; Nangas, *M'Arthur*; Gabo Island, *Maplestone*.

**Victoria.** Mitta Mitta and Wilson's Promontory, *F. Mueller*; near Albury, Beattie.

43. **G. ericifolia**, *R. Br. Prot.* Nov. 20. A low shrub, spreading or diffuse (or sometimes erect and taller ?), the branches pubescent or tomentose-villous. Leaves sessile, linear or lanceolate, mucronate-acute, with revolute margins,  $\frac{1}{2}$  to 1 in. long, silky-pubescent or villous when young, becoming glabrous above when full-grown. Racemes terminal, short but rather loose and often shortly pedunculate, quite glabrous. Pedicels slender, 2 or 3 lines long. Perianth glabrous outside, densely bearded inside below the middle, the tube 3 to  $3\frac{1}{2}$  lines long, broad and gibbous at the base, much revolute and attenuate under the very oblique limb. Torus nearly straight. Gland broad, thick, semicircular. Ovary sessile, densely villous especially on the upper side; style long, thick, more or less ciliate; stigmatic disk lateral.—Meissn. in DC. Prod. xiv. 365; *G. Latrobei*, Meissn. in. Pl. Preiss. i. 539 and in DC. Prod. xiv. 364.

**N. S. Wales.** Lachlan river, *A. Cunningham*, *Mitchell*; Limestone Creek west from Bathurst, *A. Cunningham*.

**Victoria.** Near Melbourne, Adamson, F. Mueller; Plenty Creek, Genoa river, F. Mueller.

Var. *scabrella*. Leaves more scabrous. Perianth rather larger.—*G. scabrella*, Meissn. in DC. Prod. xiv. 365.—Near Nangas, M'Arthur.

44. ***G. divaricata***, R. Br. Prot. Nov. 20. A bushy shrub more slender and spreading than *G. rosmarinifolia* and sometimes low and diffuse, the branches more or less pubescent or hirsute. Leaves linear-subulate, from under  $\frac{1}{2}$  in. to above  $\frac{3}{4}$  in. long, glabrous and smooth or more or less hirsute or scabrous. Racemes short sessile and glabrous, and perianth entirely as in *G. rosmarinifolia*, and the ovary as in that species sessile and glabrous as well as the style except a small tuft of hairs at the base on the upper side.—Meissn. in DC. Prod. xiv. 364; *G. nutans*, Meissn. l.c. (with rather longer leaves).

**N. S. Wales.** Lachlan and Gujeegong rivers, and Euryalean scrub and forest land north of Bathurst, A. Cunningham, Mitchell.

**Victoria.** Forest and Darebin Creeks, F. Mueller; Skipton, Whan; Wimmera, Dallachy.

*G. glabilla*, R. Br. Prot. Nov. 20; Meissn. in DC. Prod. xiv. 364, is a slight variety with finer, more crowded and more erect leaves, but several specimens are intermediate. The species is very near both to *G. ericifolia* and *G. rosmarinifolia*. The three might indeed be regarded as varieties of a single one. *G. larandulacea* sometimes approaches them in habit, but has a differently shaped perianth and the torus always oblique,

45. ***G. rosmarinifolia***, A. Cunn. in Field, N. S. Wales, 328. An erect shrub of 5 or 6 ft., the branches virgate, closely tomentose. Leaves mostly erect, rather crowded, sessile, linear-subulate or the larger ones linear-lanceolate, mucronate-acute, the margins much revolute,  $\frac{1}{2}$  to  $1\frac{1}{2}$  in. long, scabrous-pubescent or glabrous above, the under surface, when exposed, silky-pubescent. Racemes short, dense, sessile, terminal but often appearing lateral from the shortness of the flowering branches, the rhachis quite glabrous. Pedicels 1 to 2 lines long. Perianth glabrous outside, densely bearded inside below the middle, the tube about  $3\frac{1}{2}$  lines long, broad and gibbous at the base, much revolute and attenuate under the very oblique limb. Torus nearly straight. Gland broad, thick, semicircular. Ovary sessile, glabrous as well as the style except a tuft of hairs at the base on the upper side; stigmatic disk lateral. Fruit rather narrow, incurved, 6 or 7 lines long, not distinctly ribbed.—R. Br. Prot. Nov. 20; Meissn. in DC. Prod. xiv. 363; Sweet, Fl. Austral. t. 30; Lodd. Bot. Cab. t. 1479; *G. riparia*, Sieb. in Roem. and Schult. Syst. iii. Mant. 278.

**N. S. Wales**, Sieber, n. 33; Cox's river, A. Cunningham, Fraser; Sidmouth valley, Woolls.

The dilatation of the torus or summit of the pedicel in a ring outside the perianth, supposed to be characteristic of this species, is variable in degree both in *G. rosmarinifolia* and in *G. divaricata*, and is not always absolutely wanting in *G. ericifolia*.

SECT. 3. PLAGIOPODA.—Racemes various, erect and secund in the first few species, short and few-flowered in the others. Perianth-tube dilated below the middle and usually opening on the lower side, revo-

lute under the limb. Torus very oblique, the gland side the shortest. Ovary villous except in a few of the axillary-flowered species. Stigmatic disk very oblique or lateral.

The oblique torus, which is the chief character of this and the following section, is perhaps a somewhat artificial one, but is usually well marked. The first five of the following species differ from the heterogynous *Eugrevillea* chiefly in the torus, the remainder of the present section correspond rather with *Ptychocarpa*.

**46. G. Goodii**, R. Br. in *Trans. Linn. Soc.* x. 174, Prod. 379. Stems prostrate, diffuse (or sometimes erect?), the young branches minutely tomentose. Leaves petiolate, oval-elliptical to oblong-lanceolate, obtuse, rounded or cuneate at the base, 3 to 8 in. long, glabrous or the under surface minutely silky, of a pale colour, pinniveined with numerous primary veins uniting in an intramarginal nerve and minor reticulations conspicuous on both sides. Racemes terminal, solitary or 2 or 3 together, pedunculate, secund, the rachis 1½ to 2 in. long. Pedicels 2 to 3 lines long, minutely tomentose as well as the rachis. Perianth 6 to 8 lines long, nearly glabrous outside, bearded inside with reflexed hairs, the tube obliquely dilated at the base, attenuate above the middle and revolute under the obliquely globular depressed limb. Torus very oblique, linear, about 3 lines long. Gland horseshoe-shaped, slightly prominent. Ovary villous with long hairs, stipitate on the upper margin of the torus; style very long, more or less ciliate; stigmatic disk broad, lateral.—Meissn. in DC. Prod. xiv. 351; Guillem. Ic. Pl. Austral. t. 16.

**N. Australia.** North Coast, R. Brown; Port Essington, Armstrong; Point Pearce and Newcastle Range, F. Mueller.

**Queensland.** Sandstone country, head of Cape and Flinders rivers, Bowman.

The foliage bears some resemblance to that of *G. laurifolia*, but the flowers are totally different.

**47. G. venusta**, R. Br. in *Trans. Linn. Soc.* x. 175, Prod. 379. A tall shrub or small tree, the young branches and inflorescence ferruginous-tomentose. Leaves simple or deeply pinnatifid, with 3 to 7 long narrow-lanceolate lobes, the whole leaf 4 to 8 in. long, glabrous and pinniveined with numerous oblique parallel veins as in *G. refracta*, but not so close and often confluent in an intramarginal nerve, minutely silky-tomentose underneath with ferruginous veins. Racemes terminal, rather loose but short like those of *G. Wilsoni*. Perianth sprinkled with appressed hairs, the tube about 5 lines long, very obliquely dilated at the base, attenuate and revolute above the middle. Torus very oblique, narrow, 2 lines long. Gland horseshoe-shaped. Ovary densely villous, stipitate on the upper margin of the torus; style long, nearly glabrous; stigmatic disk lateral.—Meissn. in DC. Prod. xiv. 351; Guillem. Ic. Pl. Austral. t. 11.

**Queensland.** Shoalwater Bay, R. Brown. I have not seen this species anywhere except in R. Brown's Herbarium.

**48. G. longistyla**, Hook. in *Mitch. Trop. Austr.* 343. An erect shrub of 7 or 8 ft., the young branches minutely tomentose. Leaves

linear, 6 to 10 in. long, from very narrow to above 2 lines broad, entire or deeply divided into 3 to 5 segments, glabrous above, the margins recurved, silky-pubescent and silvery or fulvous underneath, with a prominent midrib. Racemes erect, shortly pedunculate, terminal or in the upper axils, rather loose, secund, 1 to 2 in. long. Pedicels 2 to 4 in. long, tomentose-pubescent and apparently viscid as well as the rhachis. Torus very oblique. Gland large, disk-shaped or almost horseshoe-shaped. Ovary densely but shortly villous, on a short stipe at the upper end of the torus; style very long, glabrous, thickened under the broad lateral stigmatic disk. Fruit hard, semi-globular, about  $\frac{1}{2}$  in. long. Seed scarcely winged.—Meissn. in DC. Prod. xiv. 351; *G. neglecta*, R. Br. App. Sturt Exped. 24; Meissn. l.c.

**Queensland.** Sandstone ranges near Mount Pluto and the Pyramids, *Mitchell*; Burnett ranges, *F. Mueller*; Boyd's river, *Leichhardt*; Flinders river, *Sutherland*.

The pinnate leaved specimens on which *G. neglecta* was founded, cannot be distinguished as a variety from the simple leaved ones, as both forms occur frequently on the same branch.

49. ***G. juncifolia***, *Hook. in Mitch. Trop. Austr.* 341. A tall erect shrub, the branches softly tomentose. Leaves very narrow-linear, 6 to 10 in. long, entire or here and there divided into two or three similar segments, rigid and rather thick, doubly grooved underneath and sometimes obscurely so above, glabrous or minutely pubescent. Racemes rather loose, secund, 3 to 6 in. long, usually several together in a terminal leafy panicle. Pedicels about  $\frac{1}{2}$  in. long, viscid-pubescent as well as the rhachis. Perianth yellow, slightly pubescent and apparently viscid outside, glabrous inside, the tube broad at the base, 4 or 5 lines long, much attenuate and revolute under the obliquely globular limb, the lobes with a horn-like dorsal appendage. Torus oblique. Gland broad, semicircular. Ovary villous, almost sessile on the upper margin of the torus; style very long, slightly thickened upwards; stigmatic disk lateral, convex or umboonate. Fruit very oblique, almost transverse, nearly 1 in. long. Seed broadly winged all round.—Meissn. in DC. Prod. xiv. 351; *G. Sturtii*, R. Br. App. Sturt Exped. 23; Meissn. l. c. 383, from the character given.

**Queensland.** Near Mount Pluto, *Mitchell*.

**S. Australia.** Near Central Mount Stuart, *McDouall Stuart*; scrub near Forster's range, *Herb. F. Mueller* (collector not named).

This and the preceding species approach in habit *G. chrysodendron* and *G. Banksii*, but are at once distinguished by the oblique torus.

50. ***G. Wilsoni***, *A. Cunn. in Wils. Voy.* 273. An erect shrub of 3 to 5 ft., glabrous and somewhat glaucous. Leaves twice or three times or rarely only once ternately divided into narrow-linear or subulate rigid divaricate pungent-pointed segments  $\frac{1}{2}$  to 1 in. long, doubly grooved underneath, the common petiole usually very short. Racemes loose, erect, often branched, the rhachis  $\frac{1}{2}$  to 1 in., the pedicels about  $\frac{3}{4}$  in. long, all glabrous. Perianth glabrous outside, very shortly bearded inside below the middle, the tube about 6 or 7 lines long,

slightly dilated and gibbous at the base, attenuate and revolute under the oblique depressed-globular limb. Torus very oblique. Gland large and horseshoe-shaped but scarcely prominent. Ovary very villous, on a short stipes at the upper end of the torus; style very long, glabrous or villous in the lower portion, scarcely thickened under the lateral stigmatic disk.—Meissn. in DC. Prod. xiv. 373; *G. Lindleyana*, Meissn. in Pl. Preiss. i. 542.

**W. Australia.** Swan river, Wilson, Drummond, 1st coll. n. 631, Preiss, n. 692, Harvey; Canning river, Oldfield.

**51. *G. lavandulacea*, Schlecht.** *Linnæa*, xx. 586. A low shrub, the branches more or less tomentose or silky-pubescent. Leaves sessile, entire, oblong-linear or lanceolate, mucronate-acute, the margins recurved or closely revolute, pubescent or scabrous above, silky-tomentose underneath with the midrib scarcely prominent,  $\frac{1}{2}$  to near 1 in. long. Racemes terminal, sessile, very short and almost umbel-like. Pedicels 1 to 2 lines long, tomentose as well as the rhachis. Perianth red, more or less silky-pubescent outside, at least on the limb, the shorter segments bearded inside about the middle with reflexed hairs, the tube fully 4 lines long, rather broad, gibbous at the base, revolute and attenuate under the very oblique limb. Torus very oblique. Gland broad, thick, semicircular. Ovary villous-tomentose, shortly stipitate on the upper margin of the torus; style long, glabrous or hirsute in the lower portion, thickened under the very oblique stigmatic disk.—Meissn. in DC. Prod. xiv. 302; Lem. Illustr. Hortic. t. 61; *G. rosea*, Lindl. in Paxt. Fl. Gard. ii. 91, t. 56; Meissn. l.c.; *G. ramulosa*, F. Muell.; Meissn. l.c. 302 (with very narrow leaves).

**Victoria.** N.W. districts of the Colony, F. Mueller, Dallachy; Glenelg river, Robertson, F. Mueller.

**S. Australia,** Behr; St. Vincent's Gulf, Blandowski; Encounter Bay, Whittaker; Lofty ranges, Lake Torrens, F. Mueller.

**Var. *sericea*.** Leaves very narrow, closely revolute, silky-hairy on both sides.—Mount Barker, F. Mueller; Wimmera, Dallachy.

The species is sometimes confounded with *G. ericifolia*, from which it may be at once distinguished by the oblique torus and pubescent perianth. The honey exuded from the hypogynous gland is in this species and a few others copiously secreted also from a foveola at the base of the ovary.

**52. *G. insignis*, Kipp.**; Meissn. in DC. Prod. xiv. 379. A rigid shrub, glabrous and glaucous in all its parts except the ovary. Leaves petiolate, broadly ovate, undulate sinuate and prickly-toothed, truncate or scarcely cuneate at the base,  $1\frac{1}{2}$  to  $2\frac{1}{2}$  in. long, rigidly coriaceous and veined on both sides. Racemes short and loose, solitary in the upper axils but often crowded into a short terminal panicle with a few small floral leaves, the rhachis of each raceme rarely above  $\frac{1}{2}$  in. long, the pedicels 3 to 4 lines. Perianth glabrous outside, very shortly bearded inside, the tube 4 or 5 lines long, broad below the middle, slightly contracted and revolute under the very oblique limb. Torus oblique and concave lined by the scarcely prominent gland. Ovary villous on a short stipes at the upper margin of the torus. Style not





very long, slightly villous, clavate at the end with an obovate lateral disk or scarcely prominent flat or concave face, round the small lateral stigma.

**W. Australia.**, *Drummond*, 5th coll. suppl. n. 12.

53. **G. Brownii**, Meissn. in *Pl. Preiss.* i. 537, and in *DC. Prod.* xiv. 370. A prostrate diffuse or spreading shrub of 2 or 3 ft., the branches slightly pubescent. Leaves sessile, ovate or lanceolate,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long, passing into narrower leaves twice as long, mostly with a small callous point, the margins recurved, glabrous and smooth or scabrous-punctate above, silky-tomentose or white underneath. Racemes umbel-like, few-flowered sessile and terminal. Perianth pubescent outside, bearded inside with a transverse line of reflexed hairs, the tube broad and almost saccate at the base, about 3 lines long below the curve, slightly contracted and revolute under the limb. Torus very oblique. Gland very prominent, almost horizontal. Ovary shortly stipitate on the upper margin of the torus, densely villous; style villous, not very long, with a thick oblique or lateral stigmatic disk. Fruit 5 or 6 lines long.

**W. Australia.** King George's Sound or adjoining districts, *Preiss.* n. 719, *Drummond*, n. 22; Kalgan river, *Oldfield* (with narrow leaves); Mount Barker, Upper Hay river and Perongerup, *F. Mueller*; Perongerup and Phillips ranges, *Maxwell*.

*G. d. paupcrata*, R. Br. Prot. Nov. 21; Meissn. in DC. Prod. xiv. 370, from King George's Sound, *Baxter*, appears to me to be a variety or state of this species with the racemes reduced to 1 or 2 flowers, and *G. Brownii* itself (of which I have not seen Preiss's typical specimen) may be a variety only of the common *G. fasciculata*.

54. **G. fasciculata**, R. Br. Prot. Nov. 20. A shrub, low and prostrate in the typical form but sometimes erect bushy and attaining 3 or 4 ft., the young shoots slightly pubescent with appressed hairs. Leaves sessile or very shortly petiolate, linear-lanceolate or the lower ones oblong-elliptical, obtuse or with a callous point, the margins revolute,  $\frac{1}{2}$  to 1 in. long or rather more when narrow, scabrous-punctate above, the under surface silky-tomentose but usually concealed. Racemes umbel-like, few-flowered, sessile, axillary or terminal. Pedicels 1 to 2 lines long. Perianth red, clothed or sprinkled with appressed hairs outside, bearded inside with a transverse line of reflexed hairs, the tube broad, 3 to 4 lines long, saccate at the base, contracted and revolute under the globular limb. Torus very oblique. Gland broad, truncate. Ovary villous, shortly stipitate on the upper margin of the torus; style not very long, villous with short appressed hairs; stigmatic disk very oblique or lateral, broad and thick, often concave. Fruit about 5 lines long.—Meissn. in DC. Prod. xiv. 369; *G. Meissneriana*, F. Muell. in *Linnaea* xxvi. 357, Meissn. l.c. 360; *G. aspera* var. *linearis*, Meissn. in *Pl. Preiss.* i. 537.

**W. Australia.** King George's Sound and adjoining districts, *Baxter*, *Drummond*, *Preiss*, n. 712 and 718, *Harvey*, and others; eastward to E. Mount Barren, *Maxwell*.

The species varies much in the size of the flowers, the breadth of the leaves and even VOL. V.

in the degree of obliquity of the torus, but I have been unable among the numerous specimens seen to mark out any distinct narrow-leaved small flowered variety as represented by Preiss's, n. 712 (*G. Meissneriana*).

55. **G. aspera**, R. Br. in *Trans. Linn. Soc.* x. 172, *Prod.* 377. A shrub of 5 or 6 ft., "with pendulous branches," densely tomentose. Leaves sessile or very shortly petiolate, linear or lanceolate, obtuse or acute but always mucronate, with revolute margins, 1 to 2 in. long, seaceous-pubescent and very obliquely pinniveined above, silky-tomentose underneath with the midrib alone prominent. Racemes loose but short, shortly pedunculate, solitary or 2 or 3 together at the ends of the branches and usually reflexed. Pedicels 1 to 2 lines long, tomentose-pubescent as well as the rhachis. Perianth silky or villous outside, bearded inside above the middle, the tube about 3 lines long, rather broad and very oblique at the base, shortly contracted and incurved under the very oblique depressed-globular limb. Torus very oblique. Gland horseshoe-shaped. Ovary glabrous, stipitate at the upper margin of the torus; style short, thick, dilated under the large concave lateral stigmatic disk.—Meissn. in DC. *Prod.* xiv. 360.

**S. Australia.** Port Lincoln, R. Brown, Trevor; Gawler Ranges, Sullivan.

**W. Australia?** Some of Baxter's and other specimens from the coast to the East of King George's Sound, may belong to this species but are not in flower.

Notwithstanding the glabrous ovary this species appears too nearly allied to the two preceding and to some of the following ones to be removed from the section.

56. **G. brachystylis**, Meissn. in *Pl. Preiss.* i. 538, ii. 252, and in DC. *Prod.* xiv. 350. A loosely branched shrub of 1 or 2 ft., the young shoots silky or ferruginous with short hairs. Leaves linear or lanceolate, shortly contracted at the base, the margins recurved or revolute, 2 to 4 in. long, glabrous above with a prominent midrib, ferruginous-tomentose or silky underneath. Racemes umbel-like, few-flowered, sessile, terminal or axillary. Pedicels 1 to 2 lines long. Perianth ferruginous-villous outside, bearded inside with erect (not reflexed hairs) the tube very oblique and adnate at the base, erect for about 2 lines then revolute, the limb of the lower (longer) segments very broad almost constricted into 2 concave lobes the inner one containing the anther, the outer larger one empty, the limb of the smaller upper segments normal. Torus very oblique. Gland disk-like but small. Ovary densely villous, shortly stipitate on the upper margin of the torus; style rather short, villous; stigmatic disk broad, produced into a broadly oblong appendage pubescent on the back, the stigma in the centre of the broader lower part. Fruit about  $\frac{1}{2}$  in. long.

**W. Australia**, Drummond, 2nd coll. n. 322; Sussex district, Preiss, n. 717.

57. **G. saccata**, Benth. Apparently procumbent or very spreading, the branches and young leaves softly villous, almost woolly, the older foliage rarely glabrous. Leaves sessile, linear or lanceolate, with a callous point, the margins revolute,  $\frac{3}{4}$  to  $1\frac{1}{2}$  or sometimes 2 in. long, smooth or sparingly seaceous-punctate when the hairs wear off.

Racemes umbel-like, few-flowered, terminal or in the upper axils. Pedicels 2 or 3 lines long. Perianth more or less pubescent outside, the tube very oblique, nearly 4 lines long and about as broad, the upper side dilated saccate and separated from the remainder by two longitudinal densely hairy ribs inside, the whole tube contracted and revolute at the top with a ring of reflexed hairs inside, the lower larger laminae of the limb dilated on the outer side but not constricted as in *G. brachystylis*. Torus very oblique. Gland broad, disk-like but scarcely prominent. Ovary villous, nearly sessile near the upper margin of the torus; style pubescent; stigmatic disk lateral.

**W. Australia.** *Drummond*. The habit is nearly that of *G. Drummondii*, but the perianth is very different.

58. **G. Drummondii**, Meissn. in *Pl. Preiss.* i. 536, ii. 252, and in *D.C. Prod.* xiv. 350. Stems apparently diffuse or procumbent, the branches tomentose and hirsute with long fine spreading hairs. Leaves sessile, rather crowded, oblong lanceolate or linear, obtuse or mucronate, the margins recurved,  $\frac{3}{4}$  to 1 or rarely  $1\frac{1}{2}$  in. long, sprinkled and ciliate with long fine hairs when young, scarious-punctate above when the hairs wear off or nearly smooth, pale and glabrous or sometimes silky-tomentose underneath. Racemes umbel-like, sessile, terminal or on very short axillary tufts, the flowers smaller than in the allied species. Pedicels rarely above 1 line long. Perianth glabrous or hirsute with fine hairs, bearded inside near the top with reflexed hairs, the tube rather above 2 lines long, not saccate, contracted and recurved under the oblique limb. Torus oblique. Ovary villous, on a rather long stipe on the upper margin of the torus; style short, with a large lateral stigmatic disk.

**W. Australia.** *Drummond*, 3rd coll. n. 327, 4th coll. n. 335; near Mandurah, Clarke.

59. **G. disjuncta**, F. Muell. *Fragm.* vi. 206. An erect shrub of about 2 ft. the young branches hoary or silvery with appressed hairs, the foliage glabrous. Leaves rather crowded, erect, linear-terete, scarcely mucronate, with several prominent longitudinal ribs or angles and singly grooved,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long. Pedicels axillary, solitary or in pairs, nearly glabrous, 2 to 3 lines long. Perianth pubescent outside with appressed hairs, densely bearded inside with reflexed hairs, the tube 3 to 4 lines long, broad and slightly gibbous on the upper side at the base, the gibbosity glabrous inside, contracted and revolute under the obliquely globular limb. Torus oblique. Gland broad, semiannular, scarcely prominent. Ovary densely villous, nearly sessile on the upper margin of the torus. Style very long, nearly glabrous; stigmatic disk lateral.

**W. Australia.** Salt river and rocky ranges east of Stirling river, Marwell. An imperfect specimen from *Drummond* in Herb. F. Mueller may also belong to this species.

60. **G. haplantha**, F. Muell. *Herb.* Branches tomentose, the foliage minutely pubescent or at length glabrous. Leaves sessile, narrow-

linear, thick and rigid, mucronate,  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. long, smooth and nerveless on the convex upper side, broadly channelled underneath. Pedicels axillary or lateral, in small sessile clusters sometimes reduced to a single one, 1 to 3 lines long, woolly-pubescent. Perianth pubescent outside, bearded inside to below the middle with reflexed hairs, the tube about 4 lines long, rather broad and slightly gibbous at the base, attenuate and revolute under the globular limb. Torus very oblique. Gland broad, semiannular or almost disk-shaped, slightly prominent. Ovary densely villous, nearly sessile on the upper margin of the torus; style long, pubescent or villous; stigmatic disk orbicular, lateral.

**W. Australia**, Drummond (a single specimen in Herb. F. Mueller); East Mount Barren, Maxwell.

61. **G. pinifolia**, Meissn. in DC. Prod. xiv. 350. Erect and shrubby, the young shoots silky-tomentose. Leaves linear-terete, grooved underneath, slender but rigid, erect and rather crowded, minutely pointed, glabrous and smooth when full-grown, 1 to nearly 2 in. long. Racemes umbel-like, few-flowered, axillary and sessile. Pedicels scarcely 1 line long. Perianth ferruginous-villous outside, very sparingly hairy inside, the tube rather broad, scarcely 2 lines long, contracted and recurved at the top only. Torus oblique. Gland truncate or emarginate. Ovary densely villous, very shortly stipitate at the upper margin of the torus; style short, nearly glabrous; stigmatic disk lateral, broad and thick. Fruit small.

**W. Australia**, Drummond (2nd coll.?) n. 161, 4th coll. n. 281.

62. **G. acuaria**, F. Muell. Herb. Branches divaricate, sparingly pubescent as well as the foliage with minute appressed hairs or nearly glabrous. Leaves divaricate, linear-terete, slender but rigid, pungent-pointed, slightly grooved,  $\frac{1}{2}$  to nearly 1 in. long. Pedicels solitary or clustered few together, axillary or terminal, 2 to 3 lines long. Perianth glabrous outside, bearded inside to below the middle, with short reflexed hairs, the tube nearly 4 lines long, rather narrow but open on the lower side only, attenuate and recurved under the globular limb. Torus very oblique. Gland broad and flat, slightly prominent. Ovary glabrous, stipitate on the upper margin of the torus. Style long, stigmatic disk lateral, orbicular.

**W. Australia**, Drummond. This is referred to by F. Mueller, Fragm. vi. 207, as a variety of *G. sparsiflora*, which it much resembles in inflorescence and flowers; but, besides the foliage, it differs in the very oblique torus. It is only known from a small specimen which is however abundantly in flower.

63. **G. singuliflora**, F. Muell. Fragm. vi. 92. A densely branched glabrous shrub, probably small. Leaves sessile or very shortly petiolate, broadly ovate or orbicular, very obtuse, flat or undulate, with a nerve-like margin, 4 to 6 lines long, faintly pinniveined on both sides. Pedicels in pairs in the upper axils, filiform, glabrous, 3 to 4 lines long. Perianth glabrous outside, slightly pubescent inside about the middle, the tube gibbous at the base on the upper side, about 4 lines

long, revolute under the globular limb. Torus very oblique, linear, about 2 lines long. Gland small and horseshoe-shaped at the lower end. Ovary glabrous on a long stipe at the upper end of the torus; style rather long; stigmatic disk lateral.

**Queensland.** Dogwood Creek, Leichhardt.

**64. *G. pauciflora*, R. Br. in Trans. Linn. Soc. x. 171, Prod. 377.** An erect bushy shrub, the branches silky or hoary-tomentose. Leaves linear or oblong, usually cuneate, very obtuse or with a small callous point, with nerve-like sometimes recurved margins tapering to the base and sometimes shortly petiolate,  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. long, glabrous above when full grown, silky underneath or at length nearly glabrous, the midrib alone prominent. Pedicels in pairs or in very short racemes of 2 or 3 pairs, axillary or terminal, 1 to 2 lines long. Perianth red, sprinkled with a few small hairs outside, densely bearded inside by a ring of reflexed hairs above the middle, the tube about 3 lines long, dilated below the middle but almost acute not gibbous at the base, attenuate above the middle and recurved under the globular limb. Torus oblique. Gland semiannular. Ovary glabrous on a short thick stipe; style short; stigmatic disk lateral. Fruit about  $\frac{3}{4}$  in. long.—Meissn. in DC. Prod. xiv. 356; *G. oligantha*, F. Muell. Fragm. vi. 206.

**S. Australia.** Port Lincoln, R. Brown; Marble Ranges, Wilhelmii; Spencer's Gulf, Warburton.

**W. Australia.** Lucky Bay, R. Brown; S.W. end of Russel Range and Phillips river, Maxwell.

The specimens are many of them very unsatisfactory.

**65. *G. Strangea*, Benth.** A small erect glabrous shrub. Leaves rather crowded, erect, linear or linear-cuneate, obtuse or mucronate, contracted at the base,  $1\frac{1}{2}$  to  $2\frac{1}{2}$  in. long, thick and veinless. Flowers unknown. Fruits solitary on lateral recurved pedicels of 3 or 4 lines, stipitate on the torus, quite glabrous, fusiform, slightly compressed, thick and hard, 1 to  $1\frac{1}{2}$  in. long, opening along the upper suture as in all genuine Grevilleas. Seed probably like that of *G. cynanchicarpa*, but only known from a single separate membranous outer coating in Herb. F. Mueller, similar to that of *G. cynanchicarpa*.—*Strangea linearis*, Meissn. in Hook. Kew Journ. vii. 66, and in DC. Prod. xiv. 348.

**Queensland.** Wide Bay, Bidwill; swamps near Durval, Leichhardt; Sandy ridge, Cape Byron, C. Moore.

As far as the characters are derived from the fruit and foliage, the only parts known, this species appears to me to be even sectionally inseparable from *G. cynanchicarpa*; but both require further investigation from more perfect specimens.

**66. *G. cynanchicarpa*, Meissn. in Hook. Kew Journ. vii. 75.** A spreading but stout and rigid shrub of 3 or 4 ft., the young branches tomentose, the adult foliage glabrous. Leaves rather crowded, erect, linear, acute or mucronate, thick and rigid but flat or slightly concave, veinless, contracted at the base but scarcely petiolate, 2 to 4 in. long in some specimens, 3 to 6 in. in other. Pedicels solitary in the axils,

about 3 lines long. Perianth unknown. Torus very oblique. Gland prominent, thick, obliquely semiannular. Ovary tomentose-villous, stipitate on the upper margin of the torus, with 2 laterally attached ovules as in all other *Grevilleæ*; style short and thick; stigmatic disk large and lateral. Fruit 2 to  $2\frac{1}{2}$  in. long, rather narrow, hard, tapering at both ends, obtusely ribbed, opening along the upper suture. Seed flat, oblong,  $1\frac{1}{2}$  to 2 in. long, thin but not distinctly winged, slightly thickened about the hilum which is very near the base, the outer membranous coating separating from the inner and opening in two valves. Embryo of the shape of the seed and equally distant from both ends, the radicle exceedingly short at the lower end.—*Molloya cynanchicarpa*, Meissn. in DC. Prod. xiv. 348.

**W. Australia.** Moore river and sand plain north of Diamond river, *Diamond*, 6th coll. n. 190; Cockleshell gully, Murchison river, *Oldfield*.

This has been proposed as a distinct genus on the supposition that the seed was winged at the upper end like that of a *Hakea*, and that the ovule was solitary. That proves however to be a mistake. The ovary, fruit, and seed are precisely those of several true *Grevilleæ*, except as to what appears to be the outer coating of the seed, which in this species and in *G. Strangea* separates itself from the inner in a manner not observed in other species, but which, in the absence of any other character, can scarcely justify the generic separation of these plants so long as the seeds of so many allied species remain unknown.

**SECT. 4. CALOTHYRSUS.**—Racemes secund, usually terminal and many-flowered. Perianth-tube more or less dilated below the middle and usually opening on the lower side, revolute under the limb. Torus very oblique, the gland-side the shortest. Ovary glabrous, stipitate. Species all tropical, except *G. Huegelii*.

This section comprises all the species with a very oblique torus and glabrous ovary excepting a very few with almost solitary axillary flowers, which I thought better placed in *Plagiopoda* with others of the same exceptional inflorescence.

**67. *G. quercifolia*, R. Br. Prot. Nov. 23.** An undershrub or shrub of 1 to 3 ft., glabrous and glaucous like *G. Sympheæ* but the branches terete or nearly so. Leaves ovate or oblong, sinuate-pinnatifid with short broad mucronate or pungent-pointed lobes, cuneate or rarely truncate at the base and very shortly petiolate, mostly 3 to 4 in. sometimes 5 in. long, or those of long lateral branches much smaller, all prominently veined and often undulate. Racemes dense,  $\frac{1}{2}$  to 1 in. long, pedunculate in the upper axils or 3 or 4 on a long terminal leafless peduncle. Bracts broad, very deciduous or rarely more persistent. Pedicels 1 to 2 lines long. Perianth purple, glabrous outside, pubescent inside about the middle, very much revolute in the bud, slightly dilated at the base, abruptly bent down above the ovary when expanded, the limb very obliquely ovoid. Torus very oblique. Gland obsolete. Ovary glabrous, on a long stipe on the upper margin; style flattened; stigmatic disk large and lateral.—Meissn. in Pl. Preiss. i. 551, and in DC. Prod. xiv. 390; *G. brachyantha*, Lindl. Swan Riv. App. 31.

**W. Australia.** Swan river, *Fraser, Drummond*, 1st coll. n. 619, *Preiss.* n. 693; Vasse river, *Oldfield*; Cape Leeuwin, *Lay and Collie* (with long loose racemes).

Var. *angustifolia*. Leaves lanceolate, pinnatifid, 3 to 6 in. long.—W. Australia, *Drummond*; Mount Barker, *Oldfield*, *F. Mueller*; Donnelly and Blackwood rivers, *T. C. Carey*.

68. **G. angulata**, *R. Br. Prot. Nov.* 24. A shrub of 3 to 6 ft., quite glabrous and usually glaucous, or the young shoots scarcely pubescent. Leaves petiolate, ovate or oblong, cuneate at the base, more or less undulate and prickly-toothed, 1 to 2 in. long or rather more when narrow, reticulate on both sides. Racemes dense, secund, axillary and terminal, on peduncles of ½ to 1 in., the rhachis 6 to 8 lines long. Pedicels slender, 1½ to 2 lines long. Perianth glabrous or pubescent with short appressed hairs outside, densely bearded inside with erect hairs, the tube nearly 4 lines long, not much dilated at the base, attenuate and much revolute under the globular limb. Torus oblique. Gland prominent, horseshoe-shaped. Ovary glabrous, stipitate on the upper margin of the torus; style rather long; stigmatic disk ovate, lateral. Fruit very obtuse with the base of the style lateral, 4 to 6 lines long.—Meissn. in DC. Prod. xiv. 380; *G. ilicifolia*, A. Cunn. Herb. not of R. Br.

**N. Australia.** Sims's Island, *A. Cunningham*; Victoria river, *Byaoe, F. Mueller*; Fitzmaurice river, *F. Mueller*.

Var.? *lanceifolia*, *F. Muell.* Leaves oblong-lanceolate, 2 to 3 in. long.—Stony ranges, Central Australia, *Herb. F. Mueller* (collector not named).

69. **G. Wickhami**, *Meissn. in DC. Prod. xiv. 380*. A shrub of 4 to 6 ft. or a small tree, the young branches and foliage minutely silky-pubescent, the older leaves nearly glabrous. Leaves petiolate, ovate, angular or sinuate, with prickly-pointed angles or teeth, cuneate at the base, 1 to 1½ in. long, reticulate as in *G. angulata*, or thicker with the reticulations less conspicuous. Racemes secund, ¾ to 2 in. long, on short axillary peduncles or terminating short branches. Pedicels 1 to 2 lines long, glabrous as well as the rhachis. Perianth glabrous outside, bearded inside about the middle, the tube scarcely 3 lines long, broad and very oblique at the base, contracted and much revolute under the globular limb. Torus oblique. Gland horseshoe-shaped, large but not very prominent. Ovary glabrous, stipitate on the upper margin of the torus; style glabrous or minutely papillose-pubescent, with a large lateral stigmatic disk. Fruit very obtuse, 4 to 5 lines long.

**N. Australia.** Usborne's Harbour, N.W. coast, *Wickham*; Roebuck Bay, *Martin*; King's Sound and Clio Bay, *Chapman*; Port Darwin, *Schultz.*; Gulf of Carpentaria, *F. Mueller*.

70. **G. agrifolia**, *A. Cunn. in R. Br. Prot. Nov.* 24. A shrub of strong growth, the young shoots minutely silky-tomentose, often ferruginous and the old foliage scarcely glabrous. Leaves petiolate, obovate-cuneate, more or less undulate and angular or sinuate with prickly-pointed angles or teeth, tapering from the middle downwards,

$1\frac{1}{2}$  to 3 in. long, more obliquely pinniveined than in *G. Wickhami*, the reticulations prominent on both sides. Racemes rather dense, secund, 1 to  $1\frac{1}{2}$  in. long, on short peduncles, axillary or terminating short branches. Pedicels 1 to 2 lines long, glabrous as well as the rhachis. Perianth glabrous outside, densely bearded inside with reflexed hairs, the tube 3 or 4 lines long, scarcely dilated at the base, much revolute under the globular limb. Torus oblique. Gland large, horseshoe-shaped. Ovary glabrous, on a slender stipes, at the upper margin of the torus; style long, slender, glabrous; stigmatic disk lateral. Fruit obliquely globular, 7 or 8 lines diameter.—Meissn. in DC. Prod. xiv. 380.

**N. Australia.** Cape Pond, Sims's, Lacrosse, and Goulburn Islands, *A. Cunningham*; Nichol Bay, *F. Gregory's Expedition*; Gulf of Carpentaria, *F. Mueller*; in the interior, *M'Douall Stuart's Expedition*.

71. **G. Cunninghamii**, *R. Br. Prot. Nov. 23*. A glabrous and more or less glaucous shrub attaining 10 ft. Leaves sessile or nearly so, ovate, deeply cordate with broad stem-clasping auricles, undulate and prickly-toothed, 1 to 2 in. long and broad, prominently but finely reticulate on both sides. Racemes axillary, short and few-flowered, on slender peduncles of about  $\frac{1}{2}$  in., the pedicels 1 to 2 lines long, all quite glabrous. Perianth glabrous outside, sparingly bearded inside about the middle, the tube scarcely 3 lines long, broad and very oblique below the middle, contracted and much revolute under the globular limb. Torus oblique. Gland horseshoe-shaped, large but slightly prominent. Ovary glabrous, shortly stipitate near the upper margin of the torus; style not very long, broad and flattened, stigmatic disk oval-oblong, lateral. Fruit oblique, very obtuse, 4 to 5 lines long.—Meissn. in DC. Prod. xiv. 379; *G. carduifolia*, A. Cunn. Herb.

**N. Australia.** Montague Sound, N.W. coast, *A. Cunningham*.

72. **G. pungens**, *R. Br. in Trans. Linn. Soc. x. 175, Prod. 379*. An erect shrub of 2 to 5 ft., the branches and foliage silky-pubescent. Leaves sessile, deeply and regularly pinnatifid, with 11 to 21 lanceolate rigid pungent-pointed lobes, the lower ones often 2-fid or 3-fid, much veined above, more densely silky underneath with the midribs alone prominent, the whole leaf 1 to 2 in. or even longer, variable in the breadth and depth of the lobes. Racemes terminal, secund, solitary or 2 together, shortly pedunculate, 2 to 3 in. long, quite glabrous. Pedicels 1 to 2 lines long. Perianth glabrous inside and out, the tube about 4 lines long, somewhat dilated below the middle, attenuate upwards and revolute under the very obliquely globular limb. Torus oblique. Gland prominent, half cup-shaped, truncate or 2-lobed. Ovary glabrous on a short stipes; style not very long, slightly thickened under the lateral stigmatic disk.—Meissn. in DC. Prod. xiv. 372.

**N. Australia.** W. coast of the Gulf of Carpentaria, *R. Brown*, *Leichhardt*; Maria island, *Gulliver*.

73. **G. Huegellii**, Meissn. in Pl. Preiss. i. 543, and in DC. Prod. xiv. 372. An erect and spreading or procumbent rigid shrub attaining sometimes several ft., the young branches slightly tomentose. Leaves pinnate with 3 to 7 segments, all entire or the lower ones again divided, linear, rigid, pungent-pointed, thick but flat, glabrous and smooth above, doubly grooved underneath, and more or less silky in the grooves. Racemes very short and few-flowered, sessile, solitary or 2 or 3 together at the ends of the branches or at the old nodes, the rachis closely tomentose. Pedicels 2 or 3 lines long. Perianth-tube rather narrow, nearly straight, 7 to 8 lines long, scarcely contracted under the slightly recurved limb. Torus very oblique and elongated. Gland adnat, scarcely prominent. Ovary glabrous, on a long stipe inserted near the upper margin of the torus; style not very long, shortly clavate under the oblique convex stigmatic disk.—*G. rigidissima*, F. Muell. Pl. Viet. ii. t. 71; Meissn. in Linnaea xxvi. 356, and in DC. Prod. xiv. 350.

**N. S. Wales.** Darling and Murray desert, Mitchell, Dallachy, Mrs. Ford, and others.

**Victoria.** N.W. district of the colony, L. Morton.

**S. Australia.** Murray river to St. Vincent's and Spencer's Gulfs, F. Mueller; Gawler river, Weidenbach.

**W. Australia.** Swan river, Drummond, 1st coll. n. 634; York district, Preiss, n. 691.

74. **G. dimidiata**, F. Muell. Fragm. iii. 146. A tree (?), quite glabrous with a glaucous foliage resembling in some respects *G. mimosoides*, but at once distinguished by the broad leaves and large differently shaped flowers. Leaves falcate, 6 to 10 in. long and 1 to 3 in. broad in the middle in the few specimens seen, tapering into a short petiole, flat, rather thick, with numerous almost longitudinal veins and reticulations, not very prominent but equally visible on both sides. Racemes rather loose, 2 to 4 in. long, pedunculate and collected several together in a loose terminal panicle. Pedicels 1 to 1½ lines long. Perianth quite glabrous as well as the whole inflorescence, the tube about 4 lines long, revolute under the globular limb. Torus very oblique, concave. Gland adnate, scarcely prominent. Ovary glabrous, on a long stipe on the upper part of the torus; style long, flattened; stigmatic disk oblique, shortly conical in the centre.

**N. Australia.** Careening Bay, A. Cunningham (leaves only); Victoria river, F. Mueller; Roper river, M'Douall Stuart's Expedition.

75. **G. heliosperma**, R. Br. in Trans. Linn. Soc. x. 176, Prod. 380. A small slender tree, the young shoots minutely silvery or fulvous-pubescent, the adult foliage glabrous and more or less glaucous. Leaves once or twice pinnate, the segments not very numerous, oblong-lanceolate, obtuse, flat, 3 to 4 in. long, tapering at the base and often petiolulate, triplinerved or penniveined with few almost longitudinal primary veins and numerous almost longitudinal reticulations conspicuous on both sides, the whole leaf 6 in. to 1 ft. long. Racemes very loose, secund, 2 to 4 in. long, terminal or lateral, often branched but shorter

than the leaves. Perianth glabrous outside as well as the whole inflorescence, bearded inside below the middle, the tube fully 4 lines long, dilated towards the base, somewhat contracted upwards and much revolute under the obliquely globular limb. Torus very oblique and narrow, 3 lines long. Gland adnate, scarcely prominent. Ovary glabrous, stipitate at the upper end of the torus; style very long; stigmatic disk very oblique or lateral, very convex. Fruit nearly globular, oblique, 1 in. diameter, with very thick hard valves. Seed broadly winged all round.—Meissn. in DC. Prod. xiv. 380.

**N. Australia.** N. coast, *R. Brown*; Port Raffles, *A. Cunningham*; Melville island, *Fraser*; Point Pearce, M'Adam Range, Roper river, *F. Mueller*; Port Darwin, *Schultz*; Caledon Bay and Liverpool river, *Gull*.

**76. *G. refracta*, *R. Br.* in *Trans. Linn. Soc.* x. 176, *Prod.* 380.** A tall shrub or small tree, the young branches tomentose. Leaves mostly pinnate with 3 to 11 segments 2 to 5 in. long, linear-lanceolate or the terminal one broader, or sometimes reduced to a single oblong-cuneate leaf, the segments acute or obtuse when broad, tapering at the base and sometimes petiolulate, the margins usually recurved, nearly glabrous above and penniveined with numerous very oblique and nearly parallel primary veins, densely silky-pubescent underneath with the midrib alone prominent. Racemes short, secund, nearly sessile, usually several together in a small sessile terminal panicle, the rhachis of each raceme rarely above 1 in. long, the pedicels 2 to 3 lines, hoary-tomentose. Perianth silky-pubescent outside, bearded inside about the middle, the tube 4 to 5 lines long, dilated towards the base, contracted upwards and much revolute under the obliquely globular limb. Torus very oblique. Gland very prominent, half cup-shaped, 2-lobed. Ovary glabrous, stipitate on the upper margin of the torus; style thick, not very long; stigmatic disk lateral. Fruit very hard, nearly globular, about 1 in. diameter. Seed broadly winged.—Meissn. in DC. Prod. xiv. 382.

**N. Australia.** Islands of the Gulf of Carpentaria, *R. Brown*; Cambridge Gulf, N.W. coast, *A. Cunningham*; Cygnet Bay, Wickham; Victoria river, *Bryne*, *F. Mueller*; Sea Range and Fitzmaurice river, *F. Mueller*; Short's Range, Newcastle water, Billiard's springs, *M'Douall Stuart's Expedition*.

Var. *ceratophylla*. Leaf-segments often rather broader and several of the leaves undivided, the primary veins more conspicuous underneath.—*G. ceratophylla*, *R. Br.* in *Trans. Linn. Soc.* x. 177, *Prod.* 380; Meissn. in DC. Prod. xiv. 382; *G. heterophylla*, *A. Cunn.* in *R. Br. Prot.* Nov. 24; Meissn. l.c. 381.—Islands of the Gulf of Carpentaria, *R. Brown*; N.W. coast, *A. Cunningham*.

Var. *velutina*, Meissn. Segments of the leaves all broad and densely silky ferruginous on both sides.—*G. velutina*, *A. Cunn. Herb.*—Greville island, Regent's river, *A. Cunningham*; Glenelg river, *Martin*.

**77. *G. Dryandri*, *R. Br.* in *Trans. Linn. Soc.* x. 175, *Prod.* 379.** A tall shrub, the branches minutely hoary-tomentose or quite glabrous. Leaves pinnate, with numerous narrow-linear rather rigid mucronate segments, the lower ones 2 to 4 in. long, the upper ones gradually smaller, all with recurved or revolute margins, glabrous above and more or less marked with very oblique or longitudinal veins, silky-pubescent

underneath with the midrib prominent. Racemes loose and secund, glabrous and glaucous, from 4 or 5 in. to nearly 1 ft. long, and often several on a long stout terminal peduncle. Pedicels 3 to 5 lines long. Perianth white, glabrous outside, slightly bearded inside, the tube 7 to 9 lines long, dilated at the base, attenuate from the middle and revolute under the obliquely globular limb, the laminae of the longer segments bearing a longitudinal dorsal keel-like appendage. Torus oblique but not very much so. Gland prominent, semiannular, often 2 lobed. Ovary glabrous, on a long stipes; style very long; stigmatic disk lateral.—Meissn. in DC. Prod. xiv. 374; *G. rigens*, A. Cunn.; Meissn. l.c.; *G. callipteris*, Meissn. l.c. 375.

**N. Australia.** Islands of the Gulf of Carpentaria, *R. Brown*, *Henne*; Upper Victoria river, *F. Mueller*; Goulburn island, *A. Cunningham*; Port Essington, *Armstrong*.

**Queensland.** Cape Flinders, *A. Cunningham*.

78. ***G. polystachya***, *R. Br.* in *Trans. Linn. Soc.* x. 177, *Prod.* 380. A tall shrub or small tree, attaining about 30 ft., the branches minutely silky-pubescent or hoary when young. Leaves linear or linear-lanceolate and undivided, or dilated upwards and irregularly divided into 2 to 6 long linear-lanceolate segments, the whole leaf 6 to 10 in. long, acuminate, tapering into a petiole, glabrous above, more or less silky-pubescent underneath, with the midrib and often longitudinal lateral veins prominent. Racemes rather dense, secund, 3 to 4 in. long, glabrous, usually several in a short terminal panicle. Pedicels 1 to 2 lines long. Perianth white, glabrous outside, shortly bearded inside, the tube about 4 lines long, not much dilated at the base, narrow and revolute under the globular limb. Torus oblique but not very much so. Gland semicircular. Ovary glabrous, stipitate; style rather long, shortly thickened under the very oblique stigmatic disk. Fruit woody, obliquely orbicular,  $\frac{3}{4}$  to 1 in. diameter. Seeds broadly winged.—Meissn. in DC. Prod. xiv. 384; *G. parallala*, Knight, Prot. 121; *G. polybryta*, F. Muell. in Hook. Kew Journ. ix. 23; Meissn. l.c. 698, not of Meissn. l.c. 386.

**N. Australia.** Macadam Range and S. Alligator river, *F. Mueller*.

**Queensland.** Shoalbay passage, *R. Brown*; Gilbert river, *F. Mueller*; Endeavour and Rockingham Bays, *Dallachy*; Port Denison, *Fitzalan*; Broad Sound, Flinders and Bowen rivers, *Bowman*; Liverpool river, *Gulliver*; Port Mackay, *Nernst*.

Var. *hebestachya*. Racemes minutely hoary-pubescent. Flowers rather smaller.—Cape York, *Dauvel*; Dayman's island, *W. Hill*. Some of the Rockingham Bay specimens are intermediate between these and the typical form.

*G. angustata*, *R. Br.* Prot. Nov. 24; Meissn. in DC. Prod. xiv. 384, described from specimens in leaf only from Cape Cleveland, *A. Cunningham*, is probably only a very narrow leaved form of *G. polystachya*.

79. ***G. robusta***, *A. Cunn.* in *R. Br. Prot.* Nov. 24. A tree sometimes small and slender, sometimes robust and 80 to 100 ft. high, the young branches hoary or ferruginous-tomentose. Leaves pinnate with about 11 to 21 pinnatifid pinnae, the secondary lobes or segments entire or again lobed, lanceolate or rarely linear, often above 1 in. long, the

margins recurved, glabrous above or sprinkled with appressed hairs and obscurely veined; silky underneath, the whole leaf 6 to 8 in. long and nearly as broad. Racemes secund, 3 or 4 in. long, solitary or several together on very short leafless branches on the old wood. Pedicels slender, about  $\frac{1}{2}$  in. long, glabrous as well as the rhachis. Perianth glabrous outside and in, the tube nearly 3 lines long, scarcely dilated at the base, revolute under the ovoid limb. Torus slightly oblique. Gland prominent, semiannular. Ovary glabrous, stipitate; style long, the stigmatic disk somewhat oblique with a central cone. Fruit broad, very oblique, 8 or 9 lines long. Seed winged all round.—Meissn. in DC. Prod. xiv. 381; Bot. Mag. t. 3184; *G. umbratica*, A. Cunn.; Meissn. l.c.

**Queensland.** Brisbane river, Moreton Bay, *A. Cunningham*, Fraser.

**N. S. Wales.** From the Richmond to the Tweed rivers, *C. Moore*; Sydney woods, Paris Exhibition, 1855, *Macarthur*, n. 159, *C. Moore*, n. 88; Clarence and Richmond brushes, Lendon Exhibition, 1862, *C. Moore*, n. 108.

Under cultivation the leaf is sometimes a foot long, almost tripinnate, with numerous pinnæ and narrow acute segments.

**SECT. 5. CYCLADENIA.**—Racemes many-flowered (scarcely secund?) several in a terminal panicle. Perianth-tube narrow, recurved or reflexed under the limb. Torus straight. Gland annular, surrounding the stipes of the ovary. Ovary glabrous; style long with a lateral stigmatic disk.

The inflorescence is nearly that of the tropical species of *Calothrysus*, but the flowers are more crowded and apparently not secund. The perianth is nearly that of *Cyclopætæ*, but longer, and the section is readily distinguished from all others by the regular annular hypogynous gland.

**80. G. annulifera**, *F. Muell. Fragm.* iv. 85. A shrub of 6 to 8 ft., quite glabrous and more or less glaucous. Leaves pinnate; segments 5 or 7, narrow-linear, divaricate, rigid, pungent-pointed,  $\frac{3}{4}$  to 1 in. long, the margins revolute, smooth above, doubly grooved underneath. Racemes loose, many-flowered, 2 to 4 in. long, shortly pedunculate and usually several together in a terminal panicle. Pedicels 2 to 3 lines long, glabrous as well as the rhachis. Perianth white, glabrous outside, slightly bearded inside near the base, the segments equally separating from the base and scarcely dilated, much revolute under the obliquely globular limb, about  $\frac{1}{2}$  in. long if unrolled. Torus straight. Gland annular, rather thick but not very prominent. Ovary glabrous, on a long stipe free in the centre of the gland; style very long, with an oblique or lateral stigmatic disk.

**W. Australia.** Murchison river, *Oldfield*.

**81. G. leucopteris**, *Meissn. in Hook. Ker. Journ.* vii. 76, and in DC. Prod. xiv. 382. A shrub of 4 to 8 ft., the branches and petioles hoary or ferruginous with a close but soft and dense tomentum. Leaves pinnate; segments numerous, narrow-linear, 4 to 10 in. long, of a pale colour, convex and smooth above, more or less tomentose and doubly

grooved underneath, the whole leaf often above 1 ft. long. Racemes loose, many-flowered, 3 to 4 in. long, shortly pedunculate in a terminal panicle often raised upon branches of 3 or 4 ft. either leafless or with a few simple leaves or bracts, or rarely the panicle close upon the pinnate leaves; the common peduncle tomentose up to the racemes, but the rhachis and pedicels glabrous. Bracts broad, membranous, villous, imbricate on the young racemes but very early deciduous. Pedicels rarely above 2 lines long. Perianth glabrous outside, densely bearded inside near the base, the segments equally separating and slightly dilated at the base, revolute under the globular limb, fully 5 lines long. Torus straight. Gland annular, thick but not very prominent. Ovary glabrous, on a long stipe in the centre of the gland; style very long, slightly thickened under the lateral stigmatic disk. Fruit broad, very oblique, nearly 1 in. long.—*G. segmentosa*, F. Muell. Fragm. iii. 145, iv. 176.

**W. Australia.** Murchison river, Oldfield, Drummond, 6th coll. n. 188.

SECT. 6. CYCLOPTERA.—Flowers small in dense terminal racemes usually paniculate. Perianth-tube narrow, recurved or reflexed under the limb. Torus straight. Ovary glabrous, stipitate. Fruit usually broad. Seed winged all round.

This section has the flowers of *Lissostylis* with the general habit more of *Calothysanus*, and all the species except *G. Hillii* have the stigma on an erect cone as in *Conogyne*.

82. **G. leucadendron**, A. Cann. in R. Br. Prot. Nov. 25. A tall shrub or small tree, the foliage silky or sprinkled with small appressed hairs or rarely almost glabrous and usually glaucous. Leaves mostly pinnate, with 3 to 11 long linear flat segments, sometimes scarcely broader than thick, sometimes 2 or 3 lines broad, with about 3 longitudinal veins simple or anastomosing and prominent on both sides, the segments varying from under 6 in. to 1½ ft. in length, and occasionally again divided or rarely the whole leaf simple. Flowers very small, in dense erect racemes of 2 or 3 in., shortly pedunculate and usually several together in a terminal leafless panicle shorter than the leaves. Pedicels ½ to 1 line long. Perianth glabrous as well as the whole inflorescence, the tube narrow, about 2 lines long, reflexed under the globular limb. Torus small. Gland horseshoe-shaped, not very prominent. Ovary glabrous, on a long stipe; style not very long, rather thick, the stigmatic cone nearly straight. Fruit broad, oblique, compressed, about ¾ to 1 in. long. Seed winged all round.—Meissn. in DC. Prod. xiv. 382; *G. obliqua*, R. Br. Prot. Nov. 25; Meissn. l.c.; *G. longiloba*, F. Muell. Fragm. i. 136.

**N. Australia.** Cambridge Gulf and Enderby island, Dampier's Archipelago, A. Cunningham; Sea range, Victoria river, and sources of the Roper, Wickham, and Alligator rivers, Gulf of Carpentaria, F. Mueller.

Cunningham's specimens have leaves and fruits only, those of *G. leucadendron* from Cambridge Gulf with narrower leaf segments than those of *G. obliqua* from Enderby island; F. Mueller's are in good flower and closely connect the two forms, the leaf-segments varying in breadth from 1 to 3 lines. After as careful a comparison as the specimens admit of I have no doubt but that all belong to one species.

83. **G. pyramidalis**, A. Cunn. in R. Br. *Prot. Nor.* 25. A tall shrub or small tree, the adult foliage glabrous and glaucous. Leaves once or twice pinnate, the segments not numerous, linear-cuneate or oblanceolate, obtuse, 3 to 5 in. long, tapering at the base and often petiolulate, flat, rather thick, longitudinally but irregularly veined on both sides. Flowers very small, in paniculate glabrous racemes like those of *G. leucadendron*, and agreeing precisely in structure and proportions with that species, of which *G. pyramidalis* may prove to be a short-leaved variety.—Meissn. in DC. *Prod.* xiv. 381.

**N. Australia.** Regent's river, N.W. coast, A. Cunningham.

84. **G. striata**, R. Br. in *Trans. Linn. Soc.* x. 177, *Prod.* 380. A small or large tree, the branches closely tomentose, the foliage minutely and sometimes sparingly silky-pubescent. Leaves undivided, linear or linear-lanceolate, 6 to 18 in. long, often curved, 2 to 5 lines broad, obscurely veined above, striate underneath, with 9 to 13 raised parallel nerves, separated by intervals much narrower than the nerves themselves. Flowers small, in slender spike-like erect racemes of 2 or 3 in., shortly pedunculate and usually several together in a leafless panicle shorter than the leaves, the rachis tomentose. Pedicels scarcely 1 line long. Perianth silky-pubescent outside, glabrous inside, the tube about 2 lines long, narrow, revolute under the globular limb. Torus small. Gland semiannular, prominent. Ovary glabrous, on a slender stipe; style not very long, the stigmatic cone straight. Fruit broad, very oblique, compressed, about  $\frac{3}{4}$  in. long.—Meissn. in DC. *Prod.* xiv. 385; *G. linata*, R. Br. App. Sturt. Exped. 24; Meissn. l.c.

**N. Australia.** Victoria river, F. Mueller; islands of the Gulf of Carpentaria, R. Brown.

**Queensland.** Wide Bay, Bidwill; Port Denison, Fitalan; Kennedy district, Daintree; Flinders and Dawson rivers, Sutherland; in the interior, Mitchell.

**N. S. Wales.** Darling desert, Victorian Expedition; Bogan river, C. Sturt.

**S. Australia.** Cooper's Creek, Howitt's Expedition.

85. **G. mimosoides**, R. Br. in *Trans. Linn. Soc.* x. 177, *Prod.* 380, *Prot. Nor.* 25. A tree quite glabrous, but the foliage glaucous. Leaves undivided, lanceolate, falcate, 6 to 10 in. long, varying from under  $\frac{1}{2}$  in. to above 1 in. in breadth, obtuse or with a callous point, tapering into a short petiole, flat, with several sometimes many longitudinal veins or nerves and very oblique almost longitudinal veinlets visible on both sides, but not very prominent. Flowers small, "pinkish white" in slender glabrous racemes of 3 or 4 in. shortly pedunculate and usually several in a terminal leafless panicle. Pedicels  $\frac{1}{2}$  to 1 in. long. Perianth glabrous, the tube narrow, about 2 lines long, revolute under the globular limb. Torus small. Disk semiannular, scarcely prominent or very obscure. Ovary glabrous, on a long stipe; style long, with a short nearly-straight stigmatic cone or conical disk. Fruit broad, very oblique, somewhat compressed, fully 1 in. long. Seed-wing narrow, coriaceous.—Meissn. in DC. *Prod.* xiv. 385.

**N. Australia.** Careening Bay, N.W. coast, A. Cunningham; Victoria river,

M'Adam Range, Fitzmaurice river, *F. Mueller*; islands of the Gulf of Carpentaria, *R. Brown, Henne.*

The leaves closely resemble those of some of the tropical phyllodinous *Acacia*; when broad they are also very nearly those of *G. dimidiata*, which has however very different flowers.

86. **G. Hilliana**, *F. Muell.* in *Trans. Phil. Inst. Vict.* ii. 72. A large tree, the young branches minutely tomentose. Leaves petiolate, either entire obovate-oblong or elliptical, very obtuse, tapering at the base and 6 to 8 in. long, or still longer and deeply divided at the end into 2 or 3 diverging lobes, or deeply pinnatifid with 5 to 7 oblong or lanceolate lobes of several inches, the whole leaf then sometimes above 1 ft. long, glabrous above pinniveined and reticulate with the primary veins confluent in an intramarginal nerve, more or less silvery-silky underneath. Flowers small and very numerous in dense cylindrical racemes of 4 to 8 in., on short axillary shoots accompanied often by 1 or 2 smaller racemes. Pedicels about 1 line long, minutely pubescent as well as the rhachis. Perianth minutely silvery outside, glabrous or scarcely pubescent inside, the tube slender, about 3 lines long, revolute under the globular limb. Torus straight. Gland semiannular, not very prominent. Ovary glabrous, stipitate; style long and slender, the stigmatic disk lateral. Fruit slightly compressed, nearly 1 in. long. Seed rather narrowly winged all round.

**Queensland.** Brisbane river, Moreton Bay, *W. Hill, F. Mueller*; Rockingham Bay, *Dallachy.*

**N. S. Wales.** From the Clarence to the Tweed river, *C. Moore.*

87. **G. gibbosa**, *R. Br.* in *Trans. Linn. Soc.* x. 177, *Prod.* 380. A small or large tree sometimes reduced to a tall shrub, the branches and foliage softly tomentose-pubescent with very short hairs silvery on the young shoots and persisting on both sides of the adult leaves. Leaves entire, ovate ovate-lanceolate or oblong-elliptical, obtuse or almost acute, tapering into a short petiole, 3 to 4 or rarely 5 in. long, pinniveined with rather numerous oblique primary veins confluent in an intramarginal nerve. Flowers small, in dense spike-like racemes of 3 to 6 in., shortly pedunculate and usually 3 together at the ends of the branches. Pedicels 1 to 1½ lines long, pubescent as well as the rhachis. Perianth sprinkled or clothed with appressed hairs outside, glabrous inside, the tube slender, about 2 lines long, revolute under the globular limb. Torus small. Gland very prominent, semi-cupular, truncate or 2-lobed. Ovary glabrous, shortly stipitate; style long, filiform, the stigmatic cone straight or nearly so. Fruit obliquely globular, 1 to 1½ in. diameter, opening in 2 very hard thick hemispherical valves, enclosing 1 or 2 flat (broadly winged?) seeds.—Meissn. in DC. *Prod.* xiv. 385; *G. glauca*, Knight, *Prot.* 121.

**Queensland.** Endeavour river, *Banks and Solander*, *W. Hill*; Cape York, *M'Gillivray, Daemel*; Albany island, *F. Mueller, W. Hill*; Suttor, Cape, and Burdekin rivers, *Leichhardt, F. Mueller, Bowman*, and others.

**SECT. 7. ERIOSTYLIS.** R. Br.—Racemes umbel-like, sessile or nearly so. Flowers small, villous. Perianth-tube revolute under the

limb. Torus straight. Ovary shortly stipitate, villous as well as the style; stigmatic disk lateral. Leaves all entire.

The section is in many respects allied to the series *Hebegynne* of *Eugrevillea*, but readily distinguished by the foliage from all the species of that series except *G. concinna*, which has a glabrous style.

88. ***G. buxifolia***, *R. Br.* in *Trans. Linn. Soc.* x. 174, *Prod.* 379. A bushy shrub of 4 to 6 ft., the branches ferruginous-pubescent and villous. Leaves rather crowded, sessile, from ovate to oblong or almost lanceolate, obtuse or acute, the margins recurved,  $\frac{1}{4}$  to  $\frac{3}{4}$  in. but mostly about  $\frac{1}{2}$  in. long, minutely scabrous veined and often shining above, ferruginous or silky-pubescent underneath. Racemes terminal, sessile, umbel-like. Pedicels 3 to 6 lines long, villous as well as the rhachis. Perianth villous outside, bearded inside with reflexed hairs, the tube nearly 3 lines long, rather broad, reflexed under the globular limb. Torus straight. Gland semiannular. Ovary almost sessile, densely villous; style long, villous, clavate at the end, with a broad thick lateral stigmatic disk, the villous back produced beyond the disk into a spreading or reflexed appendage.—Meissn. in DC. *Prod.* xiv. 369; Bot. Reg. t. 443; Lodd. Bot. Cab. t. 1562; *Embothrium buxifolium*, Sm. Spec. Bot. N. Holl. 29. t. 10; Andr. Bot. Rep. t. 218; *Embothrium genianthum*, Cav. Ic. iv. 60. t. 387; *Stylurus buxifolia* and *S. collina*, Knight, Prot. 115, 116.

**N. S. Wales.** Port Jackson, *R. Brown*; *Sieber*, n. 37, *Fl. Mict.* n. 477, and many others.

89. ***G. phylloides***, *R. Br.* in *Trans. Linn. Soc.* x. 174, *Prod.* 379. A shrub of 3 or 4 ft., the branches ferruginous-villous. Leaves sessile or very shortly petiolate, linear-lanceolate or lanceolate, acute, mucronate, mostly  $\frac{3}{4}$  to 1 in. long, the margins revolute, very scabrous above, pubescent or villous underneath. Racemes umbel-like, terminal, sessile or very shortly pedunculate. Pedicels 1 to 3 lines long, tomentose as well as the rhachis. Perianth densely villous outside, bearded inside with reflexed hairs, the tube about 2 lines long reflexed under the globular limb. Torus straight. Gland very prominent, semiannular, crenate. Ovary villous, shortly stipitate; stigmatic disk lateral, thick, oblong, the villous back produced beyond the disk into a rather long erect horn.—Meissn. in DC. *Prod.* xiv. 369.

**N. S. Wales.** Gross river, *R. Brown*; Blue Mountains, *Fraser*, *Sieber*, n. 29, and others; Clarence river, *Beckler*.

90. ***G. sphacelata***, *R. Br.* in *Trans. Linn. Soc.* x. 174, *Prod.* 378. A shrub of several feet, resembling *G. phylloides*, but the indumentum of the branches and underside of the leaves closely appressed. Leaves sessile or very shortly petiolate, linear-lanceolate, obtuse with a callous point, the margins revolute,  $\frac{3}{4}$  to 1 in. long, scabrous-punctate on the upper side. Racemes umbel-like, terminal and usually sessile. Pedicels 1 to 2 lines long, pubescent as well as the rhachis. Perianth villous outside, bearded inside with reflexed hairs shorter than in *G.*





*phylicoides*, the tube scarcely 2 lines long, revolute under the ovoid limb. Torus straight. Gland very prominent, semiannular. Ovary villous, stipitate; style villous; stigmatic disk lateral, oval, thick, with a raised border, the villous back scarcely produced beyond the disk.—Meissn. in DC. Prod. xiv. 369.

**N. S. Wales.** Cook's river and George's river, *R. Brown*; Liverpool, *Leichhardt*; Illawarra, *A. Cunningham*, *Shepherd*; near Appin, *Backhouse*; Ashfield, *Herb. F. Mueller*.

91. **G. occidentalis**, *R. Br.* in *Trans. Linn. Soc.* x. 173, *Prod.* 378. A loosely branched shrub of 3 or 4 ft., the branches silky-tomentose with appressed hairs. Leaves sessile or nearly so, lanceolate or almost linear, with short callous points, the margins revolute, scabrous-punctate above, silky underneath,  $\frac{1}{2}$  to 1 in. long. Racemes umbel-like, terminal, shortly pedunculate or rarely sessile. Pedicels 2 to 4 lines long, shortly villous. Perianth villous outside, bearded inside in the upper half with reflexed hairs, the tube rather broad, fully 2 lines long, revolute under the globular limb. Torus straight. Gland semi-annular. Ovary villous, very shortly stipitate; style villous; stigmatic disk lateral, broadly orbicular, the villous dorsal centre not reaching to the margin of the disk. Fruit ovoid-oblong, about  $\frac{1}{2}$  in. long.—Meissn. in Pl. Preiss. i. 539, ii. 252, and in DC. Prod. xiv. 370.

**W. Australia.** King George's Sound and adjoining districts, *R. Brown*, *Drummond*, 2nd coll. n. 270, *Preiss*, n. 713, and several others.

92. **G. acerosa**, *F. Muell.* *Frugm.* i. 136. A shrub of about 3 ft. the branches rather slender but rigid, the young shoots silky or ferruginous. Leaves sessile, linear-terete, grooved underneath, rigid and pungent-pointed,  $\frac{1}{2}$  to  $\frac{3}{4}$  or rarely 1 in. long, glabrous and smooth when full grown. Racemes umbel-like, small, sessile, terminal or in axillary leafy tufts. Pedicels filiform, 1 to 2 lines long, villous. Perianth densely villous, the tube much revolute, the upper shorter segments scarcely above 1 line long, the limb globular. Torus straight. Gland prominent, semiannular. Ovary densely villous, very shortly stipitate; style villous; stigmatic disk lateral, oval, flat or convex, the small stigma prominent in the centre. Fruit 4 or 5 lines long.

**W. Australia**, *Drummond*, n. 126; Salt river and Cape Knob, *Maxwell*.

93. **G. umbellulata**, *Meissn.* in *Pl. Preiss.* ii. 252, and in *DC. Prod.* xiv. 371. A shrub with rather slender virgate branches, the young shoots slightly silky-hairy, the adult foliage glabrous. Leaves narrow-linear or rarely linear-lanceolate, acute, with revolute margins, not scabrous,  $1\frac{1}{2}$  to 3 in. long, a few floral ones much smaller. Racemes umbel-like, numerous, sessile, axillary and terminal. Pedicels 1 to 2 lines long, densely villous as well as the rhachis. Perianth densely villous outside, bearded inside, the tube scarcely  $1\frac{1}{2}$  lines long, revolute under the globular limb. Torus straight. Gland very short, semiannular. Ovary villous, nearly sessile; style villous and filiform

to the end; stigmatic disk lateral, orbicular, flat with a raised border, the stigma sessile or nearly so in the centre.

**W. Australia.**, Drummond, 2nd coll. n. 324; Port Gregory, Oldfield.—Very near *G. oxystigma*, but the differences in the style appear to be constant.

94. **G. oxystigma**, Meissn. in *Pl. Preiss.* i. 540, and in *DC. Prod.* xiv. 370. A shrub of 1 to 4 ft., the branches silky-pubescent or glabrous. Leaves of the main stems sometimes lanceolate and 1 to 2 in. long, those of the flowering branches linear or linear-lanceolate and  $\frac{1}{2}$  to 1 in. long, in other specimens all crowded appressed and under  $\frac{1}{2}$  in., all with revolute margins, glabrous and smooth above, the concealed under surface often silky. Racemes umbel-like, numerous, terminal or on very short axillary branches. Pedicels 2 to 4 lines long, villous as well as the rhachis. Perianth villous, the tube about  $\frac{1}{2}$  lines long, revolute under the globular limb. Torus straight. Gland short, semiannular. Ovary villous, very shortly stipitate; style villous, filiform, the obliquely clavate glabrous end forming a thick lateral orbicular disk, with the stigma raised on a prominent point in the centre. Fruit 4 or 5 lines long.—*Hakea pitulifera*, Lindl. Swan Riv. App. 36.

**W. Australia.** Swan river to King George's Sound, Drummond, 1st coll. n. 629, *Preiss.* n. 710, 714, 715, 716; Gordon and Kalgan rivers, Oldfield; base of Stirling Range, F. Mueller.

Var.? *villosa*. Branches densely villous; adult leaves scabrous-punctate.—Between Swan river and King George's Sound, Harvey; near Belgarup, Oldfield.

95. **G. Candolleana**, Meissn. in *Pl. Preiss.* i. 541, and in *DC. Prod.* xiv. 371. Apparently a low shrub, with erect and virgate or ascending and loosely branched stems, the branches more or less tomentose. Leaves sessile or nearly so, oblong-lanceolate or almost linear, mucronate, with recurved or revolute margins,  $\frac{3}{4}$  to 1½ in. long or smaller on the side branches, glabrous and smooth above with a prominent midrib, white-tomentose underneath. Racemes umbel-like, sessile, terminal and in the upper axils. Pedicels  $\frac{1}{4}$  to  $\frac{1}{2}$  in. long, densely villous. Perianth densely villous with soft hairs, the tube much revolute, the lower segments about 2 lines, the upper scarcely 1 line long under the globular limb. Torus straight. Gland small. Ovary villous on a short stipe; style villous, elongated; stigmatic disk lateral, produced at the end into a narrow-oblong involute appendage glabrous on the back, the stigma sessile on the face near the base of the disk. Fruit oblique, about  $\frac{1}{2}$  in. long.

**W. Australia.** Swan river, Drummond, 1st coll. n. 628, Oldfield; also *Preiss.* n. 2625 (Meissner).

96. **G. scabra**, Meissn. in *Pl. Preiss.* i. 541, and in *DC. Prod.* xiv. 371. A shrub, apparently more rigid and erect than *G. Candolleana*, the young leaves and branches hirsute with scattered spreading hairs. Leaves sessile and often clustered in the axils, linear or rarely lanceolate, mucronate, the margins closely revolute,  $\frac{3}{4}$  to above 1 in. long, very scabrous above after the hairs have worn off, the under surface

silky-tomentose but usually concealed. Racemes umbel-like, sessile, numerous, terminal or in the axillary tufts. Pedicels about  $\frac{1}{2}$  in. long, villous. Perianth villous and revolute as in *G. Candolleana*, but larger, the lower segments with a claw of 3 lines and the concave lamina  $1\frac{1}{2}$  lines broad, the upper segments much smaller. Torus small. Gland scarcely prominent. Ovary villous, on a short stipes. Style villous, elongated; stigmatic disk lateral, shortly produced at the base below its insertion and at the end forming an oblong involute appendage like that of *G. Candolleana*, but more or less tomentose on the back.

**W. Australia.** Swan river, Drummond, 1st coll. n. 627.

SECT. 8. LISSOSTYLIS, R. Br.—Racemes short and dense (except in *G. Victoriae* and *G. trachythecia*). Perianth-tube narrow, revolute or recurved under the limb. Torus straight. Ovary glabrous, stipitate. Stigmatic disk (or in 2 species stigmatic cone) very oblique or lateral.

SERIES 1. PUNICEÆ.—Flowers not numerous or loosely racemose, the perianth about  $\frac{1}{2}$  in. long. Leaves entire. Species all Eastern.

The species of this series approach the *Eugrevilleæ* of the series *Leiogynæ*, but the perianth, although not so small as in the rest of the section, has a narrower tube, scarcely dilated below the middle, and the segments more equally separating than in *Eugrevillea*. The racemes are also scarcely if at all secund.

97. **G. Miquelianæ**, F. Muell. in *Trans. Vict. Inst.* 1855, 132, and in *Hook. Kew Journ.* viii. 206. An erect shrub, the young branches loosely tomentose pubescent or villous. Leaves shortly petiolate, ovate or oval-oblong, obtuse, with or without a small callous point, the margins slightly recurved,  $1\frac{1}{2}$  to  $2\frac{1}{2}$  in. long, glabrous or minutely scabrous and veinless above, tomentose-pubescent penniveined and more or less reticulate underneath. Racemes short, dense, on very short recurved terminal peduncles. Pedicels 1 to  $1\frac{1}{2}$  lines long, densely pubescent as well as the rhachis. Perianth loosely pubescent or villous outside, densely bearded inside about the middle, the tube narrow, 7 or 8 lines long. Torus straight. Gland semiannular. Ovary glabrous, shortly stipitate; style not much exceeding the perianth, with a large lateral stigmatic disk. Fruit  $\frac{3}{4}$  in. long.—Meissn in DC. Prod. xiv. 352.

**Victoria.** Upper valley of the Avon, Mount Baw-Baw, summits and higher regions of Mount Useful, sources of the Macalister river, &c., F. Mueller.

98. **G. brevifolia**, F. Muell. Herb. A low bushy shrub, the branches hoary-tomentose. Leaves obovate or oval, obtuse, contracted into a very short petiole, the margins slightly recurved,  $\frac{3}{4}$  to  $1\frac{1}{4}$  in. long, glabrous shining and veinless above, hoary or silvery-tomentose with the midrib slightly prominent underneath. Racemes very short, terminal, recurved. Pedicels 1 to  $1\frac{1}{2}$  lines long, ferruginous-silky as well as the rhachis. Perianth of *G. punicea* but rather larger, ferruginous-silky outside, densely bearded inside a little below the middle, the tube fully 7 lines long, slightly dilated towards the base, incurved under the obliquely globular limb. Torus straight. Gland semiannular, scarcely

prominent. Ovary glabrous, shortly stipitate; style not much exceeding the perianth, with a large almost lateral stigmatic disk.

**Victoria.** Mount Tambo at an elevation of 5000 ft., *F. Mueller*. Included by *F. Mueller* (*Trans. Phil. Soc. Vict.* i. 108, and *Hook. Kew Journ.* viii. 205) in *G. Victoriae*, but it appears to me that both in foliage and inflorescence it is nearer to *G. Miquelianæ*, but distinct from both.

99. **G. Victoriae**, *F. Muell.* in *Trans. Phil. Soc. Vict.* i. 107, and in *Hook. Kew Journ.* viii. 205. An erect handsome shrub of 8 to 12 ft., the branches softly tomentose. Leaves petiolate, lanceolate, broad or narrow, mostly acute, with recurved margins, 2 to 4 in. long, glabrous, often shining and prominently pinniveined above, silky-pubescent underneath with the midrib alone prominent. Flowers in rather loose terminal racemes on short recurved peduncles often branched, the rhachis of each raceme  $\frac{1}{2}$  to 1 in. long, tomentose. Pedicels 1 to 2 lines long. Perianth ferruginous-silky outside, bearded inside rather below the middle, the tube 7 or 8 lines long, slightly dilated below the middle, incurved under the very oblique globular limb. Torus straight. Gland semiannular. Ovary glabrous, stipitate; style not much exceeding the perianth, with a lateral stigmatic disk. Fruit rather narrow, about  $\frac{3}{4}$  in. long.—Meissn. in DC. Prod. xiv. 353.

**Victoria.** Mount Aberdeen, Mount Latrobe, Buffalo Range, *F. Mueller*.

Var. ? *leptoneura*. Leaf veins much less prominent, the leaves obtuse, and the perianth slender as in *G. punicea*, but with the shorter style of *G. Victoriae*.—Sources of the Genoa river, *F. Mueller*.

100. **G. punicea**, *R. Br.* in *Trans. Linn. Soc.* x. 169, *Prod.* 376. An erect shrub, the young branches silky-tomentose. Leaves shortly petiolate, oblong elliptical or almost oval, obtuse with a small callous point, the margins recurved, all under 1 in. long in some specimens, a few exceeding 2 in. in others, glabrous often shining and obscurely pinniveined above and frequently with a prominent marginal or inter-marginal nerve, silvery-silky or ferruginous underneath with the midrib alone prominent. Racemes very short, rather dense, almost sessile at the ends of the branches, very spreading or recurved. Pedicels 1 to 2 lines long, tomentose as well as the rhachis. Perianth slightly silky outside, densely bearded inside above the middle, the tube narrow, 5 or 6 lines long, revolute under the obliquely globular limb. Torus straight. Gland semiannular, not very prominent. Ovary glabrous, stipitate but scarcely thicker than the stipes and the long style; stigmatic disk very oblique or lateral. Fruit  $\frac{1}{2}$  in. long.—Meissn. in DC. Prod. xiv. 354; Bot. Reg. t. 1319; Lodd. Bot. Cab. t. 1357; Reichb. Icon. Exot. t. 105; *Lysanthe speciosa*, Knight, Prot. 118.

**N. S. Wales.** Port Jackson to the Blue Mountains, *R. Brown*, *Sieber*, n. 31, and several others.

101. **G. oleoides**, *Sieb.* in *Roem. and Schult. Syst.* iii. *Mant.* 277. An erect shrub, closely allied to *G. punicea* and probably a variety only, with the same indumentum venation of leaves flowers and fruit, but the leaves are longer and narrower, 2 to 4 in. long and linear or lanceolate, and

the racemes are mostly sessile in the axils of the leaves or terminating very short axillary branches.—R. Br. Prot. Nov. 17; Meissn. in DC. Prod. xiv. 353; Reichb. Icon. Exot. t. 104, *G. Seymouriae*, Sweet; Meissn. l.c. 354, (partly).

**N. S. Wales.** Blue Mountains? Sieber, n. 35; George's river, Macarthur, n. 214; near Appin, Backhouse; Illawarra, A. Cunningham, Fraser.

Var. *dimerpha*. Leaves rather more rigid, lanceolate in some specimens, linear in others, racemes more constantly axillary and flowers sometimes but not always rather smaller. —*G. dimerpha*, F. Muell. in Trans. Phil. Soc. Vict. i. 21, and in Hook. Kew Journ. viii. 206; Meissn. in DC. Prod. xiv. 353.

**Victoria.** Grampians, Mitchell, Wilhelm, Robertson, F. Mueller.

102. **G. trinervis**, R. Br. Prot. Nov. 18. A low rigid spreading shrub with the habit of and closely allied to *G. juniperina*, the branches softly tomentose. Leaves lanceolate or linear, rigid and pungent-pointed, with recurved or revolute margins, under 1 in. long, glabrous above and prominently 3 nerved, but the lateral nerves sometimes close to the margin, silky-tomentose underneath. Racemes short, dense, terminal. Pedicels very short or rarely nearly 2 lines long. Perianth silky-pubescent outside, densely bearded inside about the middle, the tube about  $\frac{1}{2}$  in. long, slightly dilated below the middle, revolute under the globular limb. Torus nearly straight. Gland semiamnular, slightly prominent. Ovary glabrous, stipitate; style rather long, with a broad lateral stigmatic disk unbonate in the centre.—Meissn. in DC. Prod. xiv. 363.

**N. S. Wales.** Argyle County and near Bathurst, Fraser, Macarthur, Woolls; Campden, Leichhardt; Clarence river, Beckler; heads of Hastings and Macleay rivers, C. Moore.

103. **G. juniperina**, R. Br. in Trans. Linn. Soc. x. 171, Prod. 377. An erect and bushy or spreading shrub, the branches softly tomentose or villous. Leaves very spreading, linear-subulate, rigid and pungent-pointed, with revolute margins,  $\frac{1}{2}$  to  $\frac{3}{4}$  or rarely 1 in. long, glabrous and 1-nerved or rarely 2-nerved above, silky-pubescent underneath. Racemes very short, almost umbel-like, sessile, terminal. Pedicels mostly  $\frac{1}{2}$  to 1 line long. Perianth silky-pubescent outside, bearded inside about the middle, usually pale yellow and green but often more or less tinged with red, the tube 5 to 6 lines long, slightly dilated below the middle, revolute under the globular limb. Torus nearly straight. Gland semi-annular, slightly prominent. Ovary glabrous, stipitate; style rather long, with a broad almost lateral stigmatic disk. Fruit about 4 lines long.—Meissn. in DC. Prod. xiv. 363; Guillemin. l.c. Pl. Austral. t. 8; Bot. Reg. t. 1089; Lodd. Bot. Cab. t. 1003.

**N. S. Wales.** Port Jackson to the Blue Mountains, R. Brown, Sieber, n. 34, and others (all with the perianth more or less tinged with red).

Var. *sulphurea*. Perianth without any or scarcely any red tint.—*G. sulphurea*, A. Cunn. in Field, N. S. Wales, 329; R. Br., Prot. Nov. 17; Meissn. in DC. Prod. xiv. 362; Lodd. Bot. Cab. t. 1723; *G. aciphylla*, Sieb. Pl. Exs.; *G. australis*, Roem. and Schult. Syst. iii. Mant. 278; *G. acifolia*, Spreng. Syst. Cur. Post. 46.—Blue Mountains? Sieber, n. 28; Cox's river, A. Cunningham, Fraser; Berrima, Macarthur; on the Murrumbidgee, Woolls.

The pink and the yellow-flowered specimens are not distinguishable when dry, and the red tinge appears to be very variable.

SERIES 2. SERICEÆ.—Flowers numerous in short dense racemes. Perianth-tube under 4 lines long. Leaves entire. Species all Eastern.

104. **G. sericea**, R. Br. in *Trans. Linn. Soc.* x. 170, Prod. 376. An erect spreading or diffuse shrub, the branches rather slender, silky-pubescent and often angular when young. Leaves very shortly petiolate, oblong-lanceolate or almost linear, mucronate, with recurved margins,  $\frac{1}{2}$  to 1 in. long, or twice as long when narrow, glabrous or sparingly silky above and more or less distinctly pinniveined, closely silky-tomentose underneath with the midrib alone prominent. Racemes very dense, rather short, on short terminal peduncles. Pedicels  $\frac{1}{2}$  to  $1\frac{1}{2}$  lines long. Perianth more or less pink, silky-pubescent outside, densely bearded inside about the middle, the tube 2 to nearly 4 lines long, slightly dilated below the middle, revolute under the small globular limb. Torus straight. Gland semiannular, entire or 2-lobed. Ovary glabrous, stipitate; style rather long, slender, with a large lateral stigmatic disk. Fruit about  $\frac{1}{2}$  in. long.—Meissn. in DC. Prod. xiv. 354; Lodd. Bot. Cab. t. 880; Reichb. Ic. et Descr. Pl. t. 76; *Embothrium sericeum*, Sm. Specim. Bot. Nov. Holl. 25, t. 9; Audr. Bot. Rep. t. 100; *Embothrium cytisoides* Cav. Ic. iv. 60, t. 386; *Grevillea dubia*, R. Br. in *Trans. Linn. Soc.* x. 169, Prod. 376; Meissn. l.c.; Bot. Mag. t. 3798; *Lysanthe sericea* and *L. cytisifolia*, Knight, Prot. 118, 119.

**N. S. Wales.** Port Jackson to the Blue Mountains, R. Brown, Sieber, n. 38, and many others.

Var. *diffusa*. Leaves narrow, branches scarcely angular.—*G. diffusa*, Sieb. in Roem. and Schult. Syst. iii. Mant. 279, and in Spreng. Syst. Cur. Post. 46; R. Br. Prot. Nov. 17; Meissn. in DC. Prod. xiv. 355.—Port Jackson or Blue Mountains, Sieber, n. 36. This seems to me scarcely to form a distinct variety. *G. planifolia*, Lodd. Bot. Cab. t. 1737, referred by Meissner to *G. Seymourii*, seems to me from the figure to be a narrow-leaved specimen of *G. sericea*, with darker-coloured flowers.

The perianth in this species is rather less slender than in the following ones, and connects them with *G. punicea*.

105. **G. capitellata**, Meissn. in DC. Prod. xiv. 356. A low spreading shrub, the young branches densely pubescent or villous. Leaves very shortly petiolate, oblong-lanceolate or almost linear, obtuse or with a callous point, the margins revolute, 1 to 2 in. long, glabrous above and distantly pinniveined, silky-tomentose or villous underneath. Racemes short, very dense, shortly pedunculate, terminal. Pedicels very short, villous as well as the rhachis. Perianth densely villous outside, bearded inside about the middle, the tube slender, 2 to  $2\frac{1}{2}$  lines long, recurved only under the globular limb. Torus straight. Gland semiannular. Ovary glabrous, stipitate; style not very long, with a large lateral stigmatic disk.

**N. S. Wales.** Illawarra, A. Cunningham, Shepherd.—Very near the var. *diffusa* of *G. sericea*, but more villous, the leaves longer and more veined, and the perianth smaller and more slender.

106. **G. leiophylla**, F. Muell. *Herb.* Stems in all the specimens seen erect from a thick rhizome, simple or branched, scarcely above 1 ft. high, the whole plant except the inflorescence glabrous or sprinkled with a few rare appressed hairs. Leaves linear or linear-lanceolate, mucronate-acute, shortly contracted at the base, 1 to near 2 in. long, with recurved or revolute margins or quite flat, green on both sides, veinless except the prominent midrib. Inflorescence of *P. linearis*, the flowers rather smaller but of the same structure, and with the same dense tuft of hairs in the perianth-tube.

**Queensland.** Glasshouse ranges, Moreton Bay, F. Mueller, and probably from the same neighbourhood, Leichhardt. I have been unable to ascertain whether F. Mueller has published this species, or whether he subsequently considered it as an outlying variety of *G. linearis*.

107. **G. linearis**, R. Br. in *Trans. Linn. Soc.* x. 170, *Prod.* 376. An erect or spreading shrub attaining 5 or 6 ft., the branches and young shoots minutely silky-pubescent. Leaves linear or rarely linear-lanceolate, acute, with revolute margins, contracted at the base and sometimes shortly petiolate, 1 to 1½ in. long and spreading in some specimens, in others more rigid narrow and 2 to 3 in. long, glabrous above, silky-tomentose underneath, the midrib always prominent underneath and sometimes on both sides. Flowers small, in short dense somewhat secund racemes, sessile or pedunculate at the ends of the branches or in the upper axils. Pedicels 1 to 2 lines long, silky-tomentose as well as the rhachis. Perianth silky-pubescent outside, densely bearded inside about the middle, the tube slender, 2½ to near 3 lines long, revolute under the globular limb. Torus straight. Gland semiannular, scarcely prominent. Ovary glabrous, stipitate; style filiform, but little exceeding the perianth, with a very oblique or lateral stigmatic disk.—Meissn. in DC. *Prod.* xiv. 355; Bot. Mag. t. 2661; Lodd. Bot. Cab. t. 50, 858; Reichb. *le. et Descr. Pl.* t. 76; *Embothrium lineare*, Andr. Bot. Rep. t. 272; *E. linearifolium*, Cav. *le. iv.* 59, t. 386; *Lysanthe linearifolia*, Knight, Prot. 119; *Grevillea riparia*, R. Br. in *Trans. Linn. Soc.* x. 170, *Prod.* 377; Meissn. *l.c.* 355; *G. striata*, R. Br. II. cc.; Meissn. *l.c.* 356.

**N. S. Wales.** Port Jackson to the Blue Mountains, R. Brown, Sieber, n. 30, and many others. R. Brown's three species, judging from his own specimens only, differ considerably in the length, breadth, more or less revolute margins and rigidity of the leaves, but in the numerous other specimens before me pass so gradually one into the other that I have been unable to sort them into distinct varieties. Endlicher's figure of *G. riparia*, Iconogr. t. 33, represents the flowers rather larger and more secund than I have usually found them. The few short hairs near the summit of the style commented upon by Meissner, occur occasionally in this and in several of the allied species.

108. **G. confertifolia**, F. Muell. in *Trans. Phil. Soc. Vict.* i. 22, and in *Hook. Kew Journ.* viii. 207. A rigid spreading shrub, the young shoots minutely silky-pubescent. Leaves often crowded, narrow-linear, rigid, mucronate and often pungent-pointed, with revolute margins, ¾ to 1½ in. long, more or less distinctly 3-nerved above, the midrib very

prominent underneath. Racemes short, dense, somewhat secund, sessile, terminal. Pedicels about 2 lines long, silky-pubescent as well as the rhachis. Perianth silky-pubescent outside, bearded inside about the middle with a tuft of reflexed hairs, the tube slender, 2 to  $2\frac{1}{2}$  lines long, revolute under the globular limb. Torus straight. Gland semi-annular, slightly prominent. Ovary glabrous, stipitate; style not much exceeding the perianth, with a very oblique or lateral stigmatic disk.—Meissn. in DC. Prod. xiv. 368.

**Victoria.** Summits of Mount William in the Grampians, *Wilhelmi*, F. Mueller—Very near *G. linearis* and *G. parviflora*, with the flowers of the former and the leaves nearly of the latter.

109. **G. parviflora**, R. Br. in *Trans. Linn. Soc.* x. 171, Prod. 377. An erect bushy shrub of 3 to 6 ft., the branches and young shoots minutely pubescent, the foliage glabrous or sprinkled with a few silky hairs. Leaves very narrow linear, acute, with revolute margins,  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. long, doubly grooved underneath by the prominence of the midrib and margins. Flowers small, in very short umbel-like racemes shortly pedunculate and mostly terminal. Pedicels  $1\frac{1}{2}$  to 2 lines long, silky-pubescent as well as the rhachis. Perianth silky-pubescent outside, very minutely or scarcely bearded inside, the tube slender, about  $1\frac{1}{2}$  lines long, revolute under the globular limb. Torus straight. Gland scarcely prominent. Ovary glabrous, shortly stipitate. Style filiform, scarcely exceeding the perianth; stigmatic disk very oblique or lateral. Fruit  $\frac{1}{4}$  to  $\frac{1}{2}$  in. long.—Meissn. in DC. Prod. xiv. 367; *G. micrantha*, Meissn. in *Linnæa*, xxvi. 358, and in DC. l.c.

**N. S. Wales.** Blue Mountains, R. Brown; Illawarra, Shepherd; Camden, Leichhardt.

**Victoria.** Mitta-Mitta, upper branches of the Genoa river, F. Mueller; Skipton and Creswick, Whan; Portland, Robertson.

Var. *acicularia*, F. Muell. Leaves shorter and more rigid.

**S. Australia.** Kangaroo Island, Waterhouse.

110. **G. australis**, R. Br. in *Trans. Linn. Soc.* x. 171, Prod. 377. A much-branched shrub sometimes erect and 3 or 4 ft. high, sometimes very spreading and under 1 ft., or prostrate and clinging to rocks, the branches and young shoots minutely pubescent. Leaves linear or rarely oblong, with rigid often pungent points, the margins either closely revolute concealing the under surface or recurved only, contracted at the base but scarcely petiolate, from under  $\frac{1}{2}$  in. to nearly 1 in. long, glabrous above, the under surface when exposed more or less silky-tomentose. Flowers small, in short umbel-like racemes, sessile or shortly pedunculate, terminal or in the upper axils. Pedicels  $\frac{1}{2}$  to 1 line long in flower, rarely 2 lines long in fruit, tomentose as well as the rhachis. Perianth silky-pubescent outside, shortly bearded inside, the tube slender, scarcely exceeding 2 lines, recurved under the globular limb. Torus straight. Gland scarcely prominent. Ovary glabrous, shortly stipitate; style filiform, scarcely exceeding the perianth, thickened under the very oblique stigmatic disk. Fruit ellipsoid or ovoid,  $\frac{1}{4}$  to  $\frac{1}{2}$









in. long.—Meissn. in DC. Prod. xiv. 359; Hook. f. Fl. Tasm. i. 322; *G. tenuifolia*, R. Br. in Trans. Linn. Soc. x. 171, Prod. 377.

**Victoria.** Sources of the Yarra, Baw-baw, Haidinger and Cobra ranges, Mount Wellington, ascending to 6000 ft., F. Mueller; Portland, Allitt.

**Tasmania.** Derwent river and Port Dalrymple, R. Brown; abundant throughout the colony, ascending to 4000 ft., J. D. Hooker.

J. D. Hooker has carefully distinguished seven Tasmanian varieties according to the erect, spreading or prostrate habit, and the length and breadth of the leaves, the latter character depending however often on the degree in which the margins have become revolute in drying. The most remarkable variety is the *planifolia*, Hook. f., in which the leaves are  $\frac{1}{2}$  to  $\frac{2}{3}$  in. long and 1 to 2 in. broad, with the midrib prominent above, although as in all other forms scarcely conspicuous underneath. *G. Stuartii*, Meissn. in Linnaea xxvi. 357, and in DC. Prod. xiv. 355, appears to me to be a very luxuriant form of the variety *planifolia*, with the leaves  $1\frac{1}{2}$  in. long, like those of some specimens of *G. linearis*, but with smaller flowers, and the midrib not prominent underneath.

**SERIES 3. OCCIDENTALES.**—Flowers numerous in dense racemes or heads. Perianth-tube under 4 lines long. Leaves entire or divided. Fruit usually (but not always) rugose or tuberculate. Western species.

111. **G. commutata**, F. Muell. *Fragm.* vi. 207. A spreading shrub of 4 to 12 ft. the young shoots minutely silky-tomentose or ferruginous. Leaves linear, sometimes rather broad or linear-cuneate, entire or very rarely 2- or 3-toothed, with revolute margins,  $1\frac{1}{2}$  to 3 in. long, glabrous and smooth above, silky or ferruginous underneath. Racemes dense, short or oblong, on peduncles of  $\frac{1}{2}$  to 1 in., usually several together in a short terminal panicle. Pedicels 1 to  $1\frac{1}{2}$  lines long, pubescent as well as the rhachis. Perianth silky-pubescent outside, bearded inside with a ring of hairs about the middle, the tube slender, about 2 lines long, revolute under the globular limb. Tornus straight. Gland scarcely prominent. Ovary glabrous, on a short stipe; style filiform; stigmatic disk very oblique or lateral. Fruit rugose.

**W. Australia.** Murchison river, Oldfield.

112. **G. pinnatisecta**, F. Muell. Young shoots silky-pubescent. Leaves variously divided into narrow-linear segments, very rarely linear-lanceolate and entire, glabrous and smooth above, the midrib and revolute margins prominent underneath, silky-pubescent between them when broad enough to expose the under surface, the whole leaf from under 2 in. to nearly 6 in. long. Racemes short and dense, on short terminal often branched peduncles, the rhachis tomentose. Pedicels 1 to 2 lines long, silky-pubescent. Perianth silky-pubescent outside, bearded inside with a ring of hairs about the middle, the tube slender, not 2 lines long, revolute under the small globular limb. Tornus straight. Gland prominent, semiannular. Ovary glabrous, on a rather long stipe; style filiform, with a very oblique or lateral stigmatic disk. Fruit oblong, slightly rugose, 4 to 5 lines long.

**W. Australia.** Between Moore and Murchison rivers, Drummond, 6th coll. n. 184. Meissner, who had only seen the fruiting specimens, included them in his *G. Hookeriana*, which differs however widely in the perianth, the villous ovary, &c. F. Mueller, *Fragm.* vi. 208, thinks they may form a variety only of *G. commutata*.

**113. *G. argyrophylla*, Meissn.** in Hook. *Kew Journ.* vii. 75, and in *D.C. Prod.* xiv. 357. A shrub, probably tall, nearly allied to *G. diversifolia*, but with a more silvery aspect, more obtuse leaves and more globular racemes. Leaves lanceolate or oblong-cuneate, obtuse or with a small callous point, entire or shortly and obtusely 2-lobed, tapering into a short petiole, 1 to  $1\frac{1}{2}$  in. long, glabrous and veined above, more or less silvery-silky underneath. Racemes numerous, small, nearly globular, on filiform axillary peduncles. Flowers small, crowded on the very short pubescent rhachis. Pedicels scarcely 1 line long. Perianth pubescent with appressed hairs, the tube slender, about 1 line long, revolute under the globular limb. Torus straight. Gland broad, semicircular. Ovary glabrous, shortly stipitate; style filiform, with an orbicular oblique stigmatic disk. Fruit about 4 lines long, more or less rugose.

**W. Australia.** Murchison river, *Oldfield*, Drummond, 6th coll. n. 179.

**114. *G. brachystachya*, Meissn.** in *Pl. Preiss.* ii. 254, and in *D.C. Prod.* xiv. 366. Branches virgate, the young ones hoary-pubescent and often angular, the foliage glabrous or sprinkled with minute appressed hairs. Leaves erect, narrow-linear, thick and rigid, smooth above, doubly grooved underneath by the very prominent midrib and revolute margins, 2 to 4 in. long. Racemes very short and dense, terminal, almost sessile, the rhachis villous. Pedicels hirsute, about 2 lines long. Perianth more or less pubescent, especially the limb, with spreading glandular hairs, the tube slender, scarcely 3 lines long, recurved under the globular limb. Torus straight, without any gland. Ovary glabrous, on a rather long stipe; style filiform with a lateral orbicular stigmatic disk. Fruit  $\frac{3}{4}$  in. long, smooth.

**W. Australia.** Drummond, 2nd coll. n. 319; Murchison river, *Oldfield*.

**115. *G. Endlicheriana*, Meissn.** in *Pl. Preiss.* i. 546, and in *D.C. Prod.* xiv. 356. An erect shrub attaining 7 ft., with virgate branches, silvery when young, but soon glabrous. Leaves linear or linear-lanceolate, the point often recurved, tapering into a short petiole, the lower ones 2 to 4 in. long, those on the side shoots and the floral ones much reduced and often distant, flat or with recurved margins, silvery-silky on both sides, the midrib slightly prominent above, inconspicuous underneath, the upper leaves sometimes almost terete. Racemes dense, oblong,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long, shortly pedunculate, terminal or in the axils of short or almost abortive floral leaves. Bracts imbricate on the young buds but falling away very early. Pedicels under 1 line long. Perianth glabrous outside, slightly villous inside, the tube about 2 lines long, slender as in others of this section but opening only on the lower side as in *Eugrevillea*, revolute under the globular limb. Torus straight. Gland semiannular. Ovary glabrous, stipitate; style long, filiform, with an oblique orbicular stigmatic disk.

**W. Australia.** Swan river, Drummond, 1st coll. n. 630, *Preiss.* n. 698, *Oldfield*.

116. **G. manglesioides**, Meissn. in *Pl. Preiss.* i. 547, ii. 255, and in *DC. Prod.* xiv. 368. A loosely-branched shrub attaining 8 ft., the young shoots silky-ferruginous. Leaves either entire and from lanceolate to obovate-oblong, or cuneate and 3- or 5-toothed or lobed at the end, the teeth or lobes mucronate, contracted into a short petiole or nearly sessile, 1 to 1½ in. long and sometimes nearly as broad when lobed, glabrous and veined above, more or less silky or ferruginous underneath. Racemes terminal or on short axillary shoots, pedunculate or nearly sessile, the flowers crowded on a tomentose rhachis of about ½ in. and usually secund. Pedicels slender, about 1 line long. Perianth nearly glabrous outside, bearded inside above the middle, the tube slender, about 2 lines long, revolute under the small globular limb. Torus straight. Gland semiannular. Ovary glabrous, stipitate; style filiform, with an oblique or lateral orbicular stigmatic disk. Fruit about ½ in. long, slightly tuberculate-rugose.

**W. Australia**, Drummond, 2nd coll. n. 317, 318, and suppl. n. 11; Vasse river, Preiss, n. 720; Blackwood river, Walcott.

Var.? *angustissima*. Leaves narrow-linear, 2 in. long or more, ferruginous or silky underneath. Pedicels rather longer. Flowers the same.—W. Australia, Drummond.

117. **G. diversifolia**, Meissn. in *Pl. Preiss.* i. 547, ii. 255, *DC. Prod.* xiv. 368. A tall shrub attaining sometimes 12 ft., quite glabrous or with a very slight pubescence on the young shoots and inflorescence. Leaves linear or linear-lanceolate, mucronate-acute, the margins revolute, contracted into a short petiole or nearly sessile, 1½ to 2½ in. long, entire or with 2 or 3 divaricate lobes at the end, glabrous on both sides, 1- or 3-nerved. Racemes very short and dense, nearly sessile or on slender peduncles, mostly axillary, the rhachis nearly glabrous and rarely 2 lines long. Pedicels 1 to 2 lines long. Perianth slightly silky-pubescent outside, bearded inside below the middle, the tube slender, scarcely above 1 line long, revolute under the globular limb. Torus straight. Gland small, semiannular. Ovary glabrous, very shortly stipitate; style filiform, with an orbicular very oblique or lateral stigmatic disk. Fruit above ½ in. long, smooth or slightly tuberculate.

**W. Australia**, Drummond, 2nd coll. n. 316, suppl. n. 55, 56; Vasse river, Preiss, n. 697; Stirling ranges, Maxwell.

Var.? *rígida*, Meissn. Leaves shorter and more rigid, slightly silky underneath. Flowers not seen. Fruit very rugose. Perhaps a distinct species.—W. Australia, Drummond, 1st coll. 4th coll. n. 286.

118. **G. filifolia**, Meissn. in *Pl. Preiss.* i. 547, and in *DC. Prod.* xiv. 365. Branches slender, at length glabrous. Leaves semiterete, filiform, 4 to 6 in. long, not rigid, hooked at the end, silky, nerveless, obscurely grooved above or nearly flat. Racemes terminal or axillary, pedunculate, short and dense. Pedicels 2 lines long, glabrous. Perianth about 2 lines long, glabrous outside, bearded inside. Gland prominent, semi-annular. Ovary glabrous, stipitate; style filiform, with an oval lateral stigmatic disk.

**W. Australia**, Preiss, n. 699. I have not seen this species. From the above character taken from Meissner it appears to differ from *G. hakeoides* chiefly in its much longer leaves.

119. **G. hakeoides**, Meissn. in *Pl. Preiss.* ii. 252, and in *DC. Prod.* xiv. 365. A bushy shrub with the habit of the slender terete-leaved *Hakea*, the young shoots minutely silky-pubescent, the older foliage glabrous. Leaves linear-terete, rigid but slender, slightly grooved, not pungent, 1 to 2 in. long. Flowers very small, in very short dense racemes either terminal or in the upper axils, the rhachis pubescent. Pedicels 1 to  $1\frac{1}{2}$  lines long. Perianth glabrous inside and out, scarcely  $1\frac{1}{2}$  lines long, the tube slender, revolute under the globular limb. Torus straight. Gland semiannular, prominent. Ovary glabrous, shortly stipitate; style filiform, with a very oblique or lateral orbicular stigmatic disk. Fruit 3 to 4 lines long, rugose.

**W. Australia**, Drummond, 2nd coll. n. 325, 326.

120. **G. teretifolia**, Meissn. in *Pl. Preiss.* ii. 255, and in *DC. Prod.* xiv. 373. A rigid shrub, quite glabrous or the young branches minutely pubescent. Leaves linear-terete, mostly 3-fid with the lateral branches again trifid or bifid, the segments rigid, pungent-pointed, singly or doubly grooved, from 3 or 4 lines to 1 in. long, the common petiole about as long as the branches or segments. Racemes very short and dense, terminal or on short axillary shoots, sessile or nearly so, the whole inflorescence as well as the flowers glabrous or sprinkled with a few appressed hairs. Pedicels 1 to  $1\frac{1}{2}$  lines long. Perianth scarcely above 2 lines long, shortly bearded inside above the middle, the tube slender, revolute under the obliquely globular limb. Torus straight. Gland semiannular. Ovary glabrous, on a rather long stipe; style filiform, with an orbicular lateral stigmatic disk. Fruit (if correctly matched) 3 to 4 lines long, rugose.

**W. Australia**, Drummond, 3rd coll. n. 271 (in flower), Baxter (in fruit). The foliage is that of *G. triternata* and of *G. anethifolia*, but the flowers are very different from those of either species. Baxter's fruiting specimen appears to correspond with the one which Brown referred to *G. anethifolia*, but in that there was probably some mistake, as Baxter did not collect in the interior of N. S. Wales.

121. **G. eryngioides**, Benth. A rigid stout undershrub or shrub, the foliage and leafy part of the stem glabrous and very glaucous. Leaves deeply pinnatifid, with few obovate or oblong lobes broadly decurrent on the rhachis and to the base of the petiole, all obtuse or with a callous point, undulate and penniveined, the whole leaf usually 3 to 5 in. long. Upper part of the branches erect, leafless, sometimes above 1 ft. long, bearing several oblong or cylindrical dense racemes of  $\frac{3}{4}$  to 1 in., on peduncles of several inches, usually tomentoso-pubescent as well as the rhachis. Bracts broadly ovate, membranous and coloured, falling off shortly before the flowers expand. Pedicels about 1 line long. Perianth glabrous inside and out, the tube slender, about 2 lines long, revolute under the large very oblique limb. Torus straight. Gland semiannular, but scarcely prominent. Ovary glabrous, on a long

stipes; style filiform, somewhat thickened under the orbicular lateral stigmatic disk.

**W. Australia.**, *Drummond*, n. 16. The foliage of this species bears but little resemblance to that of any other Proteaceous plant.

122. **G. bracteosa**, Meissn., in *Pl. Preiss.* ii. 254, and in *DC. Prod.* xiv. 366. Branches elongated, pubescent with short appressed hairs when young, the adult foliage glabrous. Leaves distant or here and there crowded, very narrow-linear, entire or deeply divided into 3 segments, rigid but not pungent, doubly grooved underneath, 1 to 3 in. long. Racemes very short or oblong, dense, pedunculate, terminal or along almost leafless flowering branches. Bracts large, membranous, coloured, but falling off before the flowers expand. Pedicels 1 to 2 lines long. Perianth glabrous, 3 lines long but very much revolute, the upper segments much shorter. Torus straight. Gland slightly prominent, semiannular. Ovary glabrous, on a long stipes; style filiform, slightly thickened under the very oblique or lateral stigmatic disk.

**W. Australia.**, *Drummond*, 3rd coll. n. 269.

123. **G. crithmifolia**, R. Br. *Prot. Nov.* 23. A bushy shrub of 1 to 4 ft., the branches softly tomentose-pubescent, the foliage sprinkled with a few hairs or at length glabrous. Leaves rather crowded, narrow-linear, pinnately divided into 3 to 5 segments on a short common petiole or here and there entire, obtuse or scarcely acute, thick but flat, doubly grooved underneath, the whole leaf usually under 1 in. long. Racemes very short and dense, sessile, terminal or on very short axillary branches, surrounded usually by a few imbricate very deciduous bracts as in *Hakea*, the rhachis villous. Pedicels glabrous, 2 to 4 lines long. Perianth glabrous, scarcely 2 lines long, the tube slender, revolute under the globular limb. Torus straight. Gland more than semi-annular with a small free one at the back of the stipes. Ovary glabrous, on a long stipes; style filiform; stigmatic disk very oblique, conical in the centre. Fruit ovoid, tubercular and muricate,  $\frac{1}{2}$  line long.—Meissn. in *Pl. Preiss.* i. 544 and in *DC. Prod.* xiv. 387; *G. Sternbergiana*, Hortul. (Meissn.).

**W. Australia.** Swan river, *Fraser*, *Drummond*, 1st coll. n. 625, *Preiss*, n. 599, 690, and others.

124. **G. trachytheca**, F. Muell. *Fragm.* vi. 207. A tall shrub attaining 8 to 10 ft., the young branches densely clothed with a soft fulvous tomentum. Leaves sessile, narrow-linear, mucronate-acute, entire or 3-lobed,  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. long, rather thick, smooth above, doubly grooved underneath. Racemes cylindrical, terminal, not dense,  $1\frac{1}{2}$  to 3 in. long, the linear bracts sometimes persisting till the flowers are nearly out, the rhachis softly villous. Pedicels filiform, 1 to  $1\frac{1}{2}$  lines long. Flowers small and numerous. Perianth glabrous, the tube slender, about 1 line long, much revolute under the globular limb. Torus straight, without any gland. Ovary glabrous, very shortly stipitate; style long, filiform, with a very oblique stigmatic cone some-

times expanding into a disk on the lower side. Fruit very oblique, muricate, 4 to 5 lines long.

**W. Australia.** Murchison river, *Oldfield*. This and the preceding species connect *Lissostylis* with *Conogyne*.

SECT. 9. CONOGYNE.—Racemes dense or rarely slender, short or cylindrical. Perianth-tube slender, recurved under the limb. Torus straight. Ovary stipitate. Style filiform, with an erect stigmatic cone.

125. **G. triternata**, R. Br. Prot. Nov. 21. An erect bushy shrub of several ft., the young shoots and inflorescence ferruginous or silky-pubescent, the adult foliage glabrous or nearly so. Leaves twice or thrice ternately divided into narrow-linear rigid pungent-pointed divaricate segments doubly grooved underneath, the whole leaf  $1\frac{1}{2}$  to 3 in. long and broad. Racemes terminal or in the upper axils, cylindrical, rather dense, sessile and shorter than the leaves. Pedicels  $\frac{1}{2}$  to nearly 1 line long. Perianth strigose-pubescent, the tube slender, under 2 lines long, recurved under the globular limb. Torus straight. Gland semianular but scarcely prominent. Ovary hirsute, contracted into a short stipe, tapering into a rather thick style; stigmatic cone erect, surrounded by a prominent margin. Young fruit like that of *G. ramosissima*, from which this species differs chiefly in its narrow leaf-segments.—Meissn. in DC. Prod. xiv. 387; *Anadenia triternata*, A. Cunn. Herb.

**N. S. Wales.** Lachlan, Cujeegong, and Hunter's rivers, *A. Cunningham*, *Fraser*; Namoi river, *C. Moore*; Medway, *Miss Atkinson*; Berrima and Castlereagh, *Woolss.*

126. **G. ramosissima**, Meissn. in DC. Prod. xiv. 388. A bushy or spreading shrub of about 2 ft., the branches inflorescence and under side of the leaves clothed with a soft ferruginous almost silky pubescence. Leaves mostly twice trifid or the primary segments pinnate, with oblanceolate and 3-toothed or lanceolate and entire segments, all confluent and decurrent on the petiole, the teeth or lobes pungent-pointed, the margins recurved, the upper surface glabrous often shining and veined, the midrib alone prominent underneath, the whole leaf  $1\frac{1}{2}$  to 2 in. long in short bushy specimens, twice that in luxuriant ones. Racemes cylindrical, not very dense, 1 to  $1\frac{1}{2}$  in. long, terminal, mostly sessile and shorter than the leaves. Pedicels scarcely  $\frac{1}{2}$  line long. Perianth villosus, recurved, scarcely 2 lines long. Torus straight, without any gland. Ovary hirsute, contracted into a short stipe and tapering into a rather thick style; stigmatic cone erect, surrounded by a prominent margin. Fruit curved, obliquely beaked.—*Anadenia Caleyi*, R. Br. Prot. Nov. 16.

**N. S. Wales.** Barren hills north of Bathurst, Liverpool plains, Cujeegong river, *A. Cunningham*; Reedy Creek, *C. Moore*; Goulburn, *Backhouse*; Macquarie river, *Fraser*.

127. **G. monticola**, Meissn. in Pl. Preiss. ii. 259, and in DC. Prod. xiv. 390. A shrub of about 2 ft., glabrous and glaucous, with the

branches often angular, but less so than in *G. synipheo*. Leaves broadly ovate, undulate and prickly toothed, cuneate at the base but scarcely petiolate,  $1\frac{1}{2}$  to 2 in. long or rather more, rigid and strongly veined. Racemes pedunculate in the upper axils or 2 or 3 in a short terminal panicle,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long. Pedicels filiform, 1 to 2 lines long. Perianth glabrous, the tube slender, about 2 lines long, revolute under the globular limb. Torus straight, without any gland. Ovary glabrous, stipitate; style rather thick; stigmatic cone erect, bordered by a prominent margin.—*Anadenia aquifolium*, Lindl. Swan Riv. App. 31; *G. aquifolium*, Meissn. in Pl. Preiss. i. 551, not of Lindl.

**W. Australia.** Swan river, Drummond, 1st coll.

128. **G. Muelleri**, Benth. An undershrub or low shrub with erect branches of about 1 ft., rather slender and more or less hoary-pubescent. Lower leaves cuneate or oblong, 1 to  $1\frac{1}{2}$  in. long, toothed at the end; upper ones mostly linear-cuneate or lanceolate, acuminate, with 1 or 2 lateral lanceolate lobes or teeth on each side, contracted into a long narrow base, the whole leaf 2 to 4 in. long, the floral ones usually linear, 1 to 2 in. long, entire or with 2 or 3 rigid divaricate linear lobes at the end; all the leaves with revolute margins, prominent midribs, glabrous and smooth above, minutely silky-pubescent underneath. Racemes very short and dense, almost globular, sessile in the upper axils or terminal. Pedicels filiform, about 2 lines long. Perianth glabrous, slender, revolute, about 2 lines long, with a globular limb. Torus straight, without any gland. Ovary glabrous, on a filiform stipes; style shortly thickened at the base; stigmatic cone short, erect, with a very prominent margin.

**W. Australia.** Summit of Stirling range, F. Mueller.

129. **G. trifida**, Meissn. in Pl. Preiss. i. 553, and in DC. Prod. xiv. 389. An erect shrub of 2 or 3 ft., the branches slightly hoary. Leaves mostly cuneate, rather broad and shortly 3-lobed or 3-toothed, or narrower with the lobes again 3-toothed or rarely pinnately 5-lobed, all the teeth rigid and pungent-pointed, the margins recurved, the midribs prominent, the upper surface glabrous, the under often silky, the whole leaf  $\frac{1}{2}$  to 1 in. long when broad or  $1\frac{1}{2}$  in. when narrow; or in some specimens the lower undivided portion of the leaf narrow-linear,  $1\frac{1}{2}$  in. long, with 2 or 3 short divaricate lobes at the end or some of the upper ones quite entire. Racemes axillary, sessile, dense, shorter than the leaves or scarcely exceeding them, the rhachis pubescent. Pedicels 1 to 2 lines long, filiform, glabrous. Perianth glabrous, "pale yellow," slender, revolute, under 2 lines long, the limb globular, prominently 4-ribbed. Torus straight, without any gland. Ovary glabrous, on a short stipes. Style filiform; stigmatic cone short, erect, with a broadly prominent margin. Fruit nearly smooth.—*Anadenia trifida*, R. Br. in Trans. Linn. Soc. x. 167, Prod. 375; Prot. Nov. 16.

**W. Australia.** King George's Sound and adjoining districts, R. Brown, Baster, A. Cunningham, Preiss, n. 701, and others.

130. **G. synapheæ**, R. Br. *Prot. Nov.* 23. An undershrub of 1 to 2 ft., quite glabrous and glaucous or the young shoots minutely pubescent, the branches acutely angular. Leaves on a long linear-cuneate base deeply 3-lobed, the lobes cuneate and shortly 3-lobed 3-toothed or here and there lanceolate and entire, or the central one again 3-toothed, the lobes all rather broad, flat, mostly pungent-pointed, the whole leaf 2 to 4 in. long. Racemes dense,  $\frac{1}{2}$  to 1 in. long, pedunculate in the upper axils or 3 or 4 forming a terminal panicle. Pedicels filiform,  $\frac{1}{2}$  to 1 in. long. Perianth glabrous, slender, revolute, nearly 2 lines long, the limb globular. Torus straight, without any gland. Ovary glabrous, stipitate; style rather thick and flat; stigmatic cone short, erect, with a prominent margin. Fruit tuberculate-rugose, curved, about  $\frac{1}{2}$  in. long.—Meissn. in Pl. Preiss. i. 552, ii. 259, and in DC. Prod. xiv. 390; *Anadenia gracilis*, Lindl. Swan Riv. App. 31.

**W. Australia.** Swan river, Fraser, Drummond, 1st coll., 2nd coll. n. 313, Preiss, n. 702 (partly) 706.

131. **G. flexuosa**, Meissn. in Pl. Preiss. i. 553, and in DC. Prod. xiv. 389. Glabrous and glaucous with elongated branches. Leaves pinnate, the common rhachis flexuose terete or dilated and concave, 3 to 6 in. long or even more; segments 8 to 12 or more, distant, deeply pinnatifid, confluent or petiolate, with lanceolate or triangular divaricate lobes, rigid and pungent-pointed. Racemes cylindrical, dense, 1 to  $1\frac{1}{2}$  in. long, pedunculate in the upper axils or 2 or 3 in a terminal panicle. Pedicels 1 to 2 lines long. Perianth glabrous, slender, revolute, above 2 lines long; limb broadly globular. Torus straight, without any gland. Ovary glabrous, on a rather long stipe; style filiform; stigmatic cone short, erect, with a prominent margin.—*Anadenia flexuosa*, Lindl. Swan Riv. App. 31.

**W. Australia**, Drummond, 1st. coll. n. 613.

Var.? *pauciloba*. Leaves reduced to 3 linear-lanceolate segments, or to 5 with the lower pair trifid at the base.—Darling range, Oldfield, fragmentary specimens possibly taken from a side-branch of the normal form, or from some abnormal specimen of *G. synapheæ*.

132. **G. leptobotrya**, Meissn. in Pl. Preiss. ii. 256, and in DC. Prod. xiv. 388. A slender diffuse or procumbent shrub, quite glabrous or sprinkled with minute appressed hairs. Leaves on long slender petioles, mostly twice pinnate, with linear or linear-lanceolate rigid acute divaricate segments, with recurved margins, smooth above, with the midrib prominent underneath, the whole leaf often 2 to 4 in. long and broad, on a common petiole at least as long; or sometimes the lower leaves or those of the slender branches simply pinnate with narrow cuneate segments deeply divided into 3 lanceolate lobes, or pinnatifid with 5 lobes. Racemes terminal or in the upper axils, very slender, simple or branched. Pedicels filiform,  $1\frac{1}{2}$  to 4 lines long, the pairs often distant. Perianth sprinkled with appressed hairs, slender, revolute, scarcely  $1\frac{1}{2}$  lines long, the limb small, globular. Torus straight, without any gland. Ovary glabrous, stipitate; style filiform; stigmatic cone short, with a promi-

nent margin. Fruit oblique, smooth or obscurely rugose, about  $\frac{1}{2}$  in. long.

**W. Australia.**, Drummond, 3rd coll. n. 268; hills on the Gordon river, Maxwell.

133. **G. brevicuspis**, Meissn. in *Pl. Priss.* ii. 256, and in *DC. Prod.* xiv. 388. A shrub with rather slender divaricate or flexuose branches, quite glabrous. Leaves numerous, with short petioles, mostly twice divided into narrow-linear rigid divaricate pungent-pointed segments, with revolute margins, the whole leaf 1 to  $1\frac{1}{2}$  or rarely 2 in. long. Racemes short, dense, quite glabrous, sessile in the axils. Pedicels filiform, 1 to 2 lines long. Perianth glabrous, slender, revolute, about  $1\frac{1}{2}$  lines long, the limb globular, 4-ribbed. Torus straight, without any gland. Ovary glabrous, on a slender stipes; style long, filiform, shortly thickened under the stigmatic cone, which is surrounded by a very prominent margin. Fruit very oblique, smooth, about 4 lines long.

**W. Australia.**, Drummond, 2nd coll. n. 321; Murchison river, Oldfield.

134. **G. intricata**, Meissn. in *Hook. Kew Journ.* vii. 74, and in *DC. Prod.* xiv. 387. A shrub of 2 or 3 ft. (or sometimes 6 to 10 ft. ?), with slender branches, glabrous or the young shoots and inflorescence sprinkled with appressed hairs. Leaves long and slender, once twice or three times ternately divided into linear-subulate almost terete rigid acute segments, singly or doubly grooved, often above 1 in. long on a common petiole of 2 in. or more. Racemes slender, pedunculate, 1 to 2 in. long and sometimes branched, terminal or lateral. Pedicels filiform, 2 to 3 lines long. Perianth glabrous, slender, revolute, scarcely  $1\frac{1}{2}$  lines long, the limb globular. Torus straight, without any gland. Ovary glabrous, on a slender stipes; style filiform, stigmatic cone bordered by a prominent margin. Fruit 5 or 6 lines long, slightly rugose.

**W. Australia.** Murchison river and Champion Bay, Oldfield, Drummond, 6th coll. n. 189.

135. **G. didymobotrya**, Meissn. in *DC. Prod.* xiv. 386. A shrub of 3 or 4 ft. (*Oldfield*) or tree of 10 to 15 ft. (*Herb. F. Mueller*), minutely hoary or silvery-pubescent or at length glabrous. Leaves linear-terete, slender but rigid, acute or mucronate, mostly 2 to 4 in. long, finely striate and sometimes channelled underneath. Racemes shortly pedunculate, cylindrical, dense, rather narrow,  $1\frac{1}{2}$  to 2 in. long, terminal or in the upper axils, forming a terminal corymbose leafy panicle, the rhachis pubescent. Pedicels  $\frac{1}{2}$  to  $\frac{3}{4}$  line long. Perianth sprinkled with appressed hairs, slender, revolute, scarcely  $1\frac{1}{2}$  lines long, the limb globular. Torus straight, without any gland. Ovary glabrous, nearly sessile; style filiform; stigmatic cone short, surrounded by a broad margin and sometimes slightly oblique. Fruit incurved, semiobcordate, about 3 lines long.—*Anadenia filifolia*, Endl. in *Ann. Wien. Mus.* ii. 209, and Nov. Stirp. Dec. 88, from the description given, and consequently *G. capillaris*, Meissn. in *DC. Prod.* xiv. 386.

**W. Australia.**, *Drummond*, n. 163, 166, 4th coll. n. 280; Murchison river, *Old-field*; Irwin river, *Herb. F. Mueller*, collector not named.

*Anadenia Roei*, Endl. Gen. Pl. Suppl. iv. 83, as yet undescribed, is believed by Meissner to be the same as the above *A. filifolia*.

**136. *G. polybotrya***, Meissn. in DC. Prod. xiv. 386. An erect probably tall shrub, the branches and inflorescence tomentose-pubescent, the young foliage sprinkled with silvery shining hairs, glabrous but pale when full grown. Leaves entire, oblong and obtuse or oblong-lanceolate and acute, contracted into a short petiole,  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. long, flat and rather thick, veinless or the midrib and sometimes 2 lateral veins slightly prominent. Racemes or spikes shortly pedunculate, cylindrical, dense,  $1\frac{1}{2}$  to 2 in. long, numerous in a large, dense leafless terminal panicle. Flowers nearly sessile. Perianth sprinkled with appressed hairs, slender, revolute, fully 2 lines long, the limb globular. Torus straight. Gland prominent, semiannular. Ovary glabrous or slightly viscid, very shortly stipitate; style long and filiform; stigmatic cone rather short, with a prominent margin. Fruit about  $\frac{1}{2}$  in. long, compressed, apparently viscid.—*G. Martinii*, F. Muell. Fragm. iv. 129, t. 32; *G. polybotrya*, F. Muell. Fragm. vi. 208, but not the one described in Hook. Kew Journ. ix. 23.

**N. Australia.** Glenelg river, N.W. coast, *Martin*.

**W. Australia**, *Drummond*, n. 90, 162, 4th coll. n. 279.

**137. *G. nematophylla***, F. Muell. Fragm. i. 136. A shrub of 5 or 6 ft., minutely pubescent or glabrous. Leaves entire, linear-terete, slender but rigid, acute, 3 to 6 in. long, obscurely striate or channeled. Racemes cylindrical, pedunculate, rather loose,  $1\frac{1}{2}$  to  $2\frac{1}{2}$  in. long, several in a terminal panicle shorter than or scarcely exceeding the leaves, the rhachis glabrous. Pedicels scarcely  $\frac{1}{2}$  line long. Perianth glabrous or sprinkled with appressed hairs, slender, revolute, about 2 lines long, the limb globular. Torus straight. Gland prominent, semiannular. Ovary glabrous, on a long stipes; style filiform; stigmatic cone slightly oblique.

**N. S. Wales.** Mount Murchison, *Dallachy*.

**SECT. 10. ANADENIA.**—Racemes dense, short or cylindrical. Flowers small. Perianth-tube slender, straight; limb erect. Torus straight. Style filiform or dilated upwards, not contracted under the erect stigmatic cone.

**138. *G. anethifolia***, R. Br. Prot. Nov. 21. A shrub with the foliage of *G. tricornata*, but with very different flowers, the branches shortly pubescent, the foliage glabrous. Leaves once twice or three times divided into narrow-linear almost terete rigid divaricate pungent-pointed segments, singly or doubly grooved, the whole leaf under 2 in. long. Racemes short, dense, axillary or terminal. Pedicels glabrous, 1 to 2 lines long. Perianth glabrous, slender, straight or nearly so,  $2\frac{1}{2}$  lines long, the limb globular. Torus straight. Gland prominent,



Grevillea Martinii W.W.



semiannular. Ovary glabrous, on a long slender stipes; style much dilated and flattened except at the base; stigmatic cone surrounded by a prominent margin.—Meissn. in DC. Prod. xiv. 387; *Anadenia anchi-folia*, A. Cunn. Herb.

**N. S. Wales.** Rare in the barren flat country near Peel's Range, *A. Cunninghamii*.

139. **G. paradoxa**, F. Muell. *Fragn.* vi. 246. A stout rigid bushy shrub, the young shoots ferruginous or silky-pubescent, the adult foliage glabrous. Leaves very intricate, once twice or three times divided into linear-terete rigid divaricate pungent-pointed segments, rarely above  $\frac{1}{2}$  in. long and not grooved, the whole leaf under 2 in. Racemes or spikes cylindrical, thick and very dense,  $1\frac{1}{2}$  to 2 in. long, sessile amongst the last leaves, the rachis densely hirsute. Pedicels  $\frac{1}{2}$  to 1 line long. Perianth glabrous, straight or slightly curved, slender,  $2\frac{1}{2}$  to 3 lines long, the limb ovoid, erect. Torus straight. Gland prominent, semiannular. Ovary sessile or nearly so, glabrous or slightly glandular-pubescent. Style very long, filiform; stigmatic cone very narrow. Fruit ovoid, acute, tomentose, 2 to 3 lines long.

**W. Australia**, Drummond, 5th coll. suppl. n. 11.

140. **G. petrophiloides**, Meissn. in *Pl. Preiss.* ii. 257, and in DC. Prod. xiv. 387. A shrub of 4 or 5 ft., with rigid erect branches, the whole plant glabrous and glaucous or the young shoots very slightly ferruginous-pubescent. Leaves twice or three times ternately or pinnately divided into linear-terete erect segments, sometimes very slender and 1 to 2 in. long, sometimes shorter more rigid and angular, the whole leaf 4 to 8 in. long. Racemes very dense and spike-like, 2 to 4 in. long, solitary and terminal or several along a terminal stout leafless common peduncle often above 1 ft. long. Pedicels  $\frac{1}{2}$  to 1 line long. Perianth glabrous, slender, straight, 4 to  $4\frac{1}{2}$  lines long, the limb narrow-oblong, erect. Torus straight. Gland semiannular. Ovary glabrous, stipitate; style very long and filiform; stigmatic cone very narrow. Fruit nearly globular, with an oblique point, scarcely 3 lines long.

**W. Australia**, Drummond, n. 83, 3rd coll. n. 300, 5th coll. Suppl. n. 8; Murchison river, Oldfield.

141. **G. tenuiflora**, Meissn. in *Pl. Preiss.* i. 554, and in DC. Prod. xiv. 389. A bushy shrub, the branches and foliage more or less pubescent with short often glandular hairs. Leaves pinnately divided into 5 or the upper ones into 3 segments or lobes, the segments broadly cuneate 3- or 5-lobed, the lobes triangular and entire or broadly 3-lobed, all rigid and shortly pungent-pointed, often shining above and opaque underneath, but retaining a minute pubescence on both sides, the whole leaf 1 to 2 in. long and broad. Racemes terminal, dense, sessile or shortly pedunculate, 1 to  $1\frac{1}{2}$  in. long, the rachis pubescent. Bracts small, ovate, very deciduous. Pedicels filiform,  $1\frac{1}{2}$  lines long. Perianth nearly glabrous, slender, straight

$\frac{9}{2}$  lines long, the limb ovoid, 4-angled. Torus straight, without any gland. Ovary on a rather long stipe, sprinkled with few glandular hairs; style filiform, slightly thickened and pubescent towards the end; stigmatic cone very narrow, with a slightly projecting margin round the base.—*Anadenia tenuiflora*, Lindl. Swan Riv. App. 31.

**W. Australia.** Swan river, Drummond, 1st coll., Preiss, n. 703.

142. **G. pulchella**, Meissn. in *Pl. Preiss.* i. 553, and in *DC. Prod.* xiv. 389. A rather slender divaricate undershrub or shrub of 1 to 2 ft., seaceous-pubescent and often glandular, or the foliage at length glabrous. Leaves pinnate; segments 7 to 11, cuneate, trifid or 3-toothed, distinct or the upper ones confluent and more entire, the lobes or teeth triangular or lanceolate, acute or pungent-pointed, the margins revolute, the whole leaf  $1\frac{1}{2}$  to 3 in. long. Racemes dense, usually glabrous,  $\frac{1}{2}$  to 1 in. long, terminal or in the upper axils, on short slender peduncles. Pedicels scarcely 1 line long. Perianth white, glabrous, slender, straight, about  $1\frac{1}{2}$  lines long, the limb ovoid-fusiform. Torus straight, without any gland. Ovary stipitate, sprinkled with glandular hairs; style filiform, thickened under the narrow stigmatic cone. Fruit 3 to 4 lines long, the valves very open and revolute when ripe.—*Anadenia pulchella*, R. Br. in *Trans. Linn. Soc. x.* 167, Prod. 374.

**W. Australia.** King George's Sound, R. Brown, Baxter, A. Cunningham, Preiss, n. 700, and many others.

143. **G. rufis**, Meissn. in *Hook. Kew Journ.* vii. 73, and in *DC. Prod.* xiv. 390. An erect shrub or undershrub, the branches and foliage very seaceous and more or less hirsute with long spreading hairs. Leaves in the lower part of the branches cuneate, dilated and shortly once or twice ternately lobed or broadly toothed at the end, narrowed to the base but not petiolate, thick, rigid, penniveined, 1 to 2 in. long, the upper leaves distant, sessile, lanceolate, entire,  $\frac{1}{4}$  to  $\frac{1}{2}$  in. long. Racemes cylindrical, dense, 1 to  $1\frac{1}{2}$  in. long, hirsute and glandular-viscid, terminal or accompanied by one or two smaller ones lower down the branch. Bracts acuminate and comose on the very young raceme. Pedicels about 1 line long. Perianth hirsute, slender, straight, 2 lines long, the limb. ovoid. Torus straight, without any gland. Ovary almost sessile, hirsute; style long, filiform but thickened at the end under the narrow stigmatic cone.

**W. Australia.** Between Moore and Murchison rivers, Drummond, 6th coll. n. 180:

144. **G. Shuttleworthiana**, Meissn. in *Pl. Preiss.* ii. 258, and in *DC. Prod.* xiv. 386. An erect shrub perfectly glabrous or with a very slight hoary pubescence on the branches. Leaves obovate or cuneate, undulate, mucronate or acuminate, entire, contracted into a distinct petiole,  $\frac{3}{4}$  to 1 in. or rarely  $1\frac{1}{2}$  in. long, rigid and obliquely veined on both sides. Racemes cylindrical, rather dense, pedunculate, 1 to 2 in. long, terminal or in the upper axils forming sometimes a terminal

leafy panicle, the rhachis and flowers glabrous. Perianth slender, straight, under 2 lines long, the limb nearly globular. Torus straight, without any gland. Ovary glabrous, nearly sessile; style filiform, with a narrow stigmatic cone. Fruit small, semi-obcordate, falcate, the lower edge or back dilated.

**W. Australia,** Drummond, 2nd coll. n. 299, 3rd coll. n. 266.

145. **G. integrifolia,** Meissn. in DC. Prod. xiv. 385. An erect shrub, the branches and especially the foliage more or less silvery or silky-pubescent. Leaves in the typical form oblong lanceolate or oblong-cuneate, obtuse with a callous point or acute, contracted into a petiole, 1 to  $1\frac{1}{2}$  in. long, very obliquely veined and often 3-nerved. Racemes pedunculate, cylindrical, rather loose,  $1\frac{1}{2}$  to 2 in. long, several in a terminal leafy panicle, the rhachis slightly pubescent. Pedicels  $\frac{1}{2}$  to 1 line long. Perianth glabrous, slender, straight, scarcely 2 lines long, the limb ovoid. Torus straight, without any gland. Ovary almost sessile, glabrous; style filiform, the stigmatic cone almost linear, marked by a slightly projecting rim at the base. Fruit not seen ripe, when young more like that of *G. Shuttleworthiana* than of *G. stenocarpa*.—*Anadama integrifolia*, Endl. in Ann. Wien. Mus. ii. 209, and Nov. Stirp., Dec. 88.

**W. Australia,** Drummond, n. 157, 5th coll. suppl. n. 6.

Var. *obovata*. Leaves mostly obovate,  $\frac{1}{2}$  to  $\frac{1}{4}$  in. long, but on some specimens throwing off branches with leaves of the typical form.—*G. biforata*, Meissn. in Pl. Preiss. ii. 258, and in DC. Prod. xiv. 386, as to the barren specimens. —W. Australia, Roe, Drummond.

146. **G. stenocarpa,** F. Muell. Herb. An erect bushy shrub of 3 or 4 ft., more or less silvery or hoary-tomentose, the older foliage rarely quite glabrous. Leaves narrow-linear, thick but more or less flattened, acute or obtuse, striate with 3 to 5 closely approximate longitudinal nerves, 2 to 4 in. long or in a few specimens only 1 to 2 in., slightly attenuate and almost terete at the base. Racemes shortly pedunculate, rather loose,  $1\frac{1}{2}$  to  $2\frac{1}{2}$  in. long, several in a terminal leafy panicle. Pedicels very short. Perianth glabrous, slender, straight, scarcely 2 lines long, the limb ovoid. Torus straight, without any gland. Ovary glabrous, nearly sessile; style filiform; stigmatic cone very narrow, with a projecting rim at the base. Fruit (only known in very few specimens), very narrow, obliquely clavate, 5 to 8 lines long.—*G. biforata*, Meissn. in Pl. Preiss. ii. 258, and in DC. Prod. xiv. 386, as to the flowering specimens.

**W. Australia,** Drummond, 3rd coll. n. 265, 6th coll. n. 181; Murchison river, Oldfield. In some herbaria, Drummond's specimens n. 265 are associated with others without flowers of *G. integrifolia*, and had evidently been so transmitted by Drummond, in other cases the corresponding leafy specimens had been correctly sent with the flowering ones of *G. integrifolia*. I have therefore been unable to retain Meissner's specific name founded upon the supposed dimorphous foliage.

SECT. II. MANGLESIA.—Racemes short, dense, axillary. Flowers small. Perianth-tube straight, slender or fusiform, the limb erect.

Torus straight. Ovary glabrous, stipitate. Style turgid in the middle or fusiform, constricted under the erect stigmatic cone.

147. **G. acrobotrya**, Meissn. in Hook. *Kew Journ.* vii. 74, and in *DC. Prod.* xiv. 391. Branches rigidly virgate, hoary-pubescent as well as the foliage. Stem-leaves nearly sessile, broadly cuneate or fan-shaped or almost rhomboidal,  $\frac{3}{4}$  to 1 in. long, coarsely toothed at the end with mucronate or prickly teeth, glabrous above, almost silky underneath with very prominent primary veins, the upper ones passing into the smaller floral leaves, deeply divided into 3 or more linear rigid pungent-pointed lobes. Racemes dense, sessile, scarcely above  $\frac{1}{2}$  in. long, all axillary, either distant or crowded towards the ends of the branches. Pedicels filiform, 2 to 4 lines long. Perianth glabrous, about 2 lines long, the tube rather thick and scarcely longer than the globular limb. Torus straight. Gland obsolete. Ovary glabrous, stipitate; style thick and fusiform with a small terminal stigma. Fruit very oblique, about 4 lines long.

**W. Australia.** Between Moore and Murchison rivers, *Drummond*, 6th coll. n. 185. The style in this species is anomalous, but nearer to that of *Manglesia* than of *Anadenia*.

148. **G. glabrata**, Meissn. in *Pl. Preiss.* i. 549, ii. 255, and in *DC. Prod.* xiv. 391. An erect shrub of 5 or 6 ft., perfectly glabrous and more slender than the allied species. Leaves broadly cuneate, shortly and broadly 3-lobed, the lobes acute with fine pungent points, contracted into a petiole, flat, with prominent primary veins, the whole leaf 1 to  $1\frac{1}{2}$  in. long. Racemes axillary, as long as or longer than the leaves, the upper ones forming a terminal panicle; rhachis slender. Pedicels filiform, 3 to 6 lines long. Perianth glabrous, straight, about  $1\frac{1}{2}$  to 2 lines long, the tube much longer than the globular limb. Torus straight. Gland semiannular. Ovary glabrous, on a long stipe; style contracted above the ovary, then thick and fusiform and again contracted under the stigmatic cone.—Baill. *Hist. Pl.* ii. 390, f. 219 to 222; *Manglesia glabrata*, Lindl. *Swan Riv. App.* 37; *M. cuneata*, Endl. *Nov. Stirp. Dec.* 25; *Anadenia Manglesii*, Grah. in *Hook. Ic. Pl.* t. 337; *Grevillea Manglesii*, Hortul. (*Meissn.*)

**W. Australia.** Swan river, *Drummond*, 1st coll. n. 621; *Preiss.* n. 695.

149. **G. ornithopoda**, Meissn. in *Pl. Preiss.* ii. 256, and in *DC. Prod.* xiv. 391. A perfectly glabrous shrub with rather slender branches. Leaves cuneate, tapering into a long narrow base or winged petiole, divided into 3 lanceolate acutely acuminate lobes of  $\frac{1}{2}$  to 1 in., the undivided part  $1\frac{1}{2}$  to  $2\frac{1}{2}$  in. long, the three primary veins prominent underneath. Racemes axillary, simple or branched, rarely exceeding the leaves, the rhachis slender and glabrous. Pedicels filiform, 3 to 6 lines long. Perianth glabrous, nearly 2 lines long, the tube fusiform, not twice the length of the globular limb. Torus straight. Gland semiannular. Ovary glabrous, on a long stipe;

style shortly contracted at the base, then turgid and slightly contracted under the stigmatic cone. Fruit very oblique, rugose.

**W. Australia,** Drummond, 2nd coll. n. 314.

150. **G. paniculata**, Meissn. in *Pl. Preiss.* i. 550, and in *DC. Prod.* xiv. 392. A shrub of 6 to 8 ft., glabrous and often glaucous or the young shoots slightly hoary with a minute tomentum. Leaves linear-terete, slender but rigid, pungent-pointed, more or less grooved, once or twice divided into 3 rarely 2 segments  $\frac{1}{2}$  to 1 in. long, the undivided base about as long. Racemes axillary, shorter or rather longer than the leaves, simple or branched. Pedicels 2 to 4 lines long. Perianth glabrous, under 2 lines long, the tube not twice as long as the globular limb. Torus straight. Gland semiannular. Ovary glabrous, on a long stipes; style contracted at the base, then dilated and again contracted under the stigmatic cone. Fruit  $\frac{1}{2}$  in. long, oblique, but the stipes not so lateral as in the allied species, very rugose.

**N. Australia,** Drummond, n. 105, *Preiss.* n. 617, *a* and *b*; Fitzgerald Flats, Maxwell.

151. **G. biternata**, Meissn. in *Pl. Preiss.* i. 549, ii. 256, and in *DC. Prod.* xiv. 392. Branches softly tomentose-pubescent, the young shoots ferruginous. Leaves very narrow-linear, pungent-pointed, doubly grooved underneath, mostly once or twice divided into 3 or sometimes 2 segments of 1 to  $1\frac{1}{2}$  in., the undivided base as long or rather shorter and in some specimens a few leaves quite entire. Racemes axillary, sessile, shorter than the leaves. Perianth glabrous, under 2 lines long, the tube not twice the length of the globular limb. Torus straight. Gland semiannular. Ovary glabrous, on a long stipes; style shortly constricted at the base then dilated and again contracted under the stigmatic cone. Fruit rugose as in *G. triloba*, of which this may prove to be a very narrow-leaved variety.

**W. Australia,** Drummond, n. 188, 1st coll. n. 624, 2nd coll. n. 315, 323; north of Cape Paisley, Phillips and Thomas rivers, Maxwell.

Var. *leptostachya*. A shrub of 10 to 15 ft., more glabrous than the typical form, with slender racemes, about 1 in. long.—Champion Bay, Walcott.

152. **G. triloba**, Meissn. in *Hook. Kew Journ.* vii. 74, and in *DC. Prod.* xiv. 388. Branches rather stout, softly ferruginous-villous or hoary. Leaves with a linear-cuneate base of about 1 in., usually divided into 3 linear-lanceolate divaricate lobes of  $\frac{1}{2}$  to  $1\frac{1}{2}$  in., mucronate or sometimes pungent-pointed, with revolute margins, glabrous above when full-grown and obliquely veined, softly pubescent or villous underneath; a few of the lower leaves sometimes entire and oblong-lanceolate. Racemes axillary, dense, sessile, shorter than the leaves, the rhachis villous. Pedicels filiform, 3 to 5 lines long. Perianth glabrous, nearly 2 lines long, the fusiform tube much longer than the globular limb. Torus straight. Gland semiannular. Ovary glabrous, on a long stipes; style contracted at the base, then dilated into a swelling of the

shape of the ovary and again contracted under the stigmatic cone. Fruit tuberculate-rugose, about 4 lines long.

**W. Australia.** Murchison river, *Oldfield, Drummond*, 6th coll. n. 187.

153. **G. amplexans**, *F. Muell. Herb.* Quite glabrous and glaucous. Leaves sessile, nearly orbicular, deeply cordate, clasping the stem by broad auricles closed or overlapping behind the stem, veined on both sides, the principal veins produced into short pungent points. Racemes axillary or terminal, loose and somewhat branched in the only specimen seen, about 1 in. long. Pedicels 2 to 3 lines long. Perianth glabrous, straight, about 2 lines long, the tube not twice as long as the globular limb. Torus straight. Gland semiannular. Ovary glabrous, stipitate; style contracted at the base, then dilated and again contracted under the stigmatic cone. Fruit smooth, about 4 lines long.

**W. Australia.** Northern districts, *Herb. F. Mueller*, the collector not named.

154. **G. vestita**, *Meissn. in Pl. Preiss. i. 548, ii. 255, and in DC. Prod. xiv. 391.* An erect bushy shrub of 6 to 9 ft., the young shoots ferruginous-villous. Leaves cuneate, broad or narrow, tapering towards the very narrow base,  $\frac{1}{2}$  to  $1\frac{1}{2}$  in. long, more or less deeply 3- or rarely 5-lobed at the end, the lobes broad micronate and often pungent, the margins recurved, glabrous above when old and veined, pubescent or villous underneath; a few of the lower leaves often entire and oblanceolate. Racemes axillary, dense, scarcely exceeding the leaves, the rachis pubescent or villous. Pedicels  $\frac{1}{4}$  to  $\frac{1}{2}$  in. long. Perianth glabrous, nearly 2 lines long, the tube much longer than the globular limb. Torus straight. Gland semiannular. Ovary glabrous, on a long stipe; style contracted at the base, then thickened and again contracted under the stigmatic cone. Fruit very oblique, quite smooth, about 4 lines broad.—*Manglesia vestita*, Endl. Nov. Stirp. Dec. 26.

**W. Australia.** Swan river, *Drummond*, n. 65, 67, 1st coll. n. 620, *Preiss.* n. 72; King George's Sound, Williams and Murray rivers, *Oldfield* (all with broad leaves); *Drummond*, n. 29, 64, 1st coll. n. 622, 2nd coll. n. 320 (with linear-lanceolate leaf-lobes).

Var. *stenoxyne*. Style and stigmatic cone much more slender, approaching the style of *G. acrobotrys*.—W. Australia, *Drummond*.

155. **G. tridentifera**, *Meissn. in Pl. Preiss. i. 547, and in DC. Prod. xiv. 392.* A rigid shrub said to be quite glabrous in the typical form which I have not seen, the branches densely tomentose-villous in our specimens. Leaves on very short petioles, divided into 2 or 3 narrow-linear rigid pungent-pointed segments of about  $\frac{1}{2}$  in., entire or again 2-lobed, convex above, doubly grooved underneath. Racemes axillary, sessile, very short, the rachis tomentose. Pedicels filiform, 3 or 4 lines long. Perianth glabrous, about  $1\frac{1}{2}$  lines long, the tube not twice as long as the globular limb. Torus straight. Gland semiannular. Ovary glabrous, on a long stipe; style with a rather long filiform base, then dilated and again contracted under the rather broad stigmatic cone. Fruit smooth, at least when young.—*Manglesia tridentifera*, Endl. Nov. Stirp. Dec. 25 (*Meissn.*).

**W. Australia**, *Drummond*, 1st coll. n. 623.





as *Ocimum*

156. **G. erinacea**, Meissn. in Hook. *Kew Journ.* vii. 74, and in *D.C. Prod.* xiv. 392. Branches hoary-tomentose or ferruginous when young. Leaves crowded, deeply and ternately once or twice divided into slender but rigid and pungent-pointed segments, linear-terete and singly grooved or slightly flattened and doubly grooved underneath, the whole leaf under 1 in. long including the short petiole. Racemes axillary, sessile, short and dense, the rhachis slightly tomentose. Pedicels filiform, 3 to 4 lines long. Perianth glabrous,  $1\frac{1}{2}$  lines long, the tube not twice as long as the globular limb. Torus straight. Gland semi-annular, slightly prominent. Ovary glabrous, stipitate; style filiform at the base, then turgid and again contracted under the stigmatic cone. Fruit very oblique, perfectly smooth, 4 to 5 lines broad.

**W. Australia.** Between Moore and Murchison rivers, *Drummond*, 6th coll. n. 186.

## 21. HAKEA, Schrad.

(*Conchium, Sm.*)

Flowers hermaphrodite. Perianth irregular or rarely regular, the tube revolute or curved under the limb or rarely straight, the limb globular or rarely ovoid, often oblique, the laminae often cohering long after the tube has opened. Anthers all perfect, sessile in the base of the concave laminae, the connective not produced beyond the cells. Hypogynous glands united in a single semiaircular or semicircular rarely disk-shaped gland occupying the upper side of the torus, in some species very small. Ovary stipitate but usually very shortly so, with 2 amphitropous ovules laterally attached about the middle; style either long and protruding from the slit of the perianth before the summit is set free from the limb as in *Grevillea*, or not exceeding the perianth, more or less dilated at the end into a straight or oblique or lateral cone or disk, bearing the small stigma in the centre of the disk or at the summit of the cone. Fruit a hard usually woody capsule opening in 2 valves. Seeds 2, compressed and collateral, the testa produced at the upper end into a broad membranous wing usually longer than the nucleus and more or less decurrent down the upper or both margins and sometimes completely surrounding the nucleus, the nucleus itself flat and smooth on the inner face (next the other seed), convex on the outer face and usually rugose or muricate, the protuberances fitting into corresponding cavities in the valve; each seed with its wing sometimes covering the whole inner surface of the valve, more frequently placed near the upper margin and covering about half only or rather more, the remainder of the valve a hard woody mass.—Shrubs or rarely small trees. Leaves alternate, very diversified in shape, flat or terete, the margins rarely recurved and the two surfaces usually similar and equally veined. Flowers in pairs along the rhachis of a short and dense raceme or cluster or rarely in a longer raceme; the clusters or racemes sessile in the axils or rarely also terminal or in a very few species all terminal. Indumentum

as in *Grevillea*, consisting of closely appressed hairs attached by the centre, rarely of erect or spreading hairs.

The genus is limited to Australia. As will be perceived on comparing the above character with that of *Grevillea*, there is no one organ in which the two genera are absolutely distinct excepting the seed-wing, and even that, although essentially terminal in *Hakea* and annular when present in *Grevillea*, is exceptional in *Hakea* *platysperma*, for instance, where the wing is almost of equal breadth all round the nucleus; but even there the texture and venation of the wing is that of *Hakea*, not of *Grevillea*, and the two genera are with few exceptions so natural, that there are very few species that would not at once be referred to their right genus even without the fruit, especially as the wing of the seed can generally be traced in the ovule immediately after fecundation. The racemes are generally axillary and reduced to sessile clusters in *Hakea*, terminal and loose in *Grevillea*, but they are loose and elongated in the section *Grevilleoides* of *Hakea*, and terminal in *H. ruscifolia* and a few others; whilst the section *Manglesia* of *Grevillea* as well as *G. hakeoides* and a few others have the inflorescence of *Hakea*. The so called involucres or imbricate bud scales enveloping the nascent inflorescences of *Hakea*, appear to be wanting in *Grevillea*, but they are also deficient in the section *Grevilleoides* of *Hakea*, and are always so deciduous as to be generally absent from flowering specimens. The same variations of form in the perianth occur in the two genera, but in *Hakea* the hairs or beard inside the tube of many *Grevillea* are always wanting and the ovary is always glabrous. *Hakea* has also the various modifications of the pistil of *Grevillea*, except the tufted style of the section *Manglesia*. The fruit is in general totally different in the two genera, and yet that of *Grevillea gibbosa* is certainly a near approach to that of *Hakea platysperma*.

The determination of the species of *Hakea* generally requires the presence both of flowers and fruit. Species, especially amongst the terete-leaved ones, with scarcely distinguishable flowers and leaves, have sometimes very different fruits, whilst closely similar fruits have occasionally very different flowers and leaves. I have found the flowers chiefly available for sectional, the fruits for specific distinction. The dorsal protuberances on the fruit-valves of some species usually called *spurs*, appear to me to be more appropriately termed *horns*, as they occur always close to the apex not to the base of the valve.

**SECT. 1. *Grevilleoides*.**—*Flowers in oblong or cylindrical or rarely short racemes, without any involucre. Perianth much revolute. Stigmatic disk oblique or lateral, flat or broadly conical. Tropical or subtropical species.*

Leaves terete, usually very long.

Racemes as well as the whole plant quite glabrous . . . . . 1. *H. chordophylla*.

Racemes pubescent or villous.

Leaves mostly above 1 ft. long. Racemes 3 to 6 in. long.

Perianth-tube 4 to 5 lines.

Torus very oblique . . . . . 2. *H. Cunninghamii*.

Torus scarcely oblique . . . . . 3. *H. lorea*.

Leaves slender, mostly about  $\frac{1}{2}$  ft. long. Racemes 1 to 2 in. Perianth-tube under 3 lines . . . . .

4. *H. Fraseri*.

Leaves flat, linear, usually long.

Seed-wing not at all or scarcely decurrent along the nucleus.

Racemes 3 to 6 in. long. Perianth villous, 5 to 6 lines long . . . . .

5. *H. macrocarpa*.

Racemes under  $\frac{1}{2}$  in. long, pedunculate. Perianth silky, under 2 lines . . . . .

6. *H. arborescens*.

Seed-wing decurrent on both sides round the base of the nucleus . . . . .

7. *H. stenophylla*.

Leaves flat, 3-nerved, oblong or lanceolate. Racemes glabrous, about 2 in. long. Perianth 3 lines . . . . .

8. *H. trineura*.

**SECT. 2. *Euhakea*.**—*Racemes usually short or reduced to sessile clusters, enclosed before their development in an involucre or bud of imbricate scales. Perianth revolute,*

at least under the limb. Stigmatic disk oblique or lateral, flat or slightly convex, without any cone (except in *H. rugosa* and *H. rostrata*).

SERIES 1. **Obliquæ.**—Perianth pubescent. Torus oblique, the orary at the shortest margin, the remainder occupied by a large very concave calcrete gland. Leaves entire. Species all Western.

Leaves flat, tapering at the base, obscurely several-nerved.

- Leaves 4 to 8 in. long. Fruit curved with a broad, rather long, closely inflexed beak . . . . . 9. *H. cyclocarpa*.
  - Leaves under 3 in. Fruit large and thick, nearly smooth, with a very small inflexed beak . . . . . 10. *H. crassifolia*.
  - Leaves 2 to 4 in. long. Fruit very large and thick, covered with large conical tubercles . . . . . 11. *H. pandanicarpa*.
  - Leaves narrow, under 2 in. Fruit unknown . . . . . 12. *H. Roei*.
- Leaves linear-terete.
- Leaves erect, with short erect or curved points. Fruit rather large, very broad, with a small inflexed beak . . . . . 13. *H. adnata*.
  - Leaves spreading, pungent-pointed. Fruit twice as long as broad, with a short nearly straight beak . . . . . 14. *H. obliqua*.

SERIES 2. **Pubifloræ.**—Perianth pubescent. Torus straight or rarely oblique, the gland thick or semiannular. Leaves entire, toothed or divided.

Leaves flat. Fruit-valves without dorsal appendages (except in the two doubtful species).

- Leaves thick, tapering at the base, obscurely several-veined (unless very narrow). Western species.
- Leaves (mostly 3 in. or more), oblong-spathulate or lanceolate, obtuse, entire. Fruit large and thick . . . . . 15. *H. Hookeriana*.
- Leaves (1 to 2 in.) oblong-linear or linear-lanceolate, entire. Fruit large and thick . . . . . 16. *H. incrassata*.
- Leaves fan-shaped, toothed at the end.

  - Leaves truncate at the toothed end. Perianth-tube narrow, under 3 lines long . . . . . 17. *H. flabellifolia*.
  - Leaves rounded at the toothed end. Perianth-tube broad, above 3 lines long.

    - Leaf-teeth short and callous. Seed-wing decurrent on both margins of the nucleus . . . . . 18. *H. Brownii*.
    - Leaf-teeth prickly. Seed-wing decurrent only on the upper margin of the nucleus . . . . . 19. *H. Baxteri*.

- Leaves from broadly cuneate to long and narrow, mostly lobed or variously divided . . . . . 20. *H. ceratophylla*.
- Leaves not so thick, lanceolate, obscurely pinniveined. Fruit much longer than broad.
- Leaves 1 to 2 in. long. Perianth densely villous. Western species . . . . . 21. *H. lasiantha*.
- Leaves 3 to 5 in. long. Perianth silky. Eastern species . . . . . 22. *H. eriantha*.
- Leaves thick and veinless or obscurely pinniveined, but flowers unknown and therefore the affinities doubtful.

  - Fruit-valves with dorsal appendages.
  - Leaves obovate-oblong (1½ to 3 in.). Fruit above 2 in. long, 1½ in. broad . . . . . 23. *H. megalosperma*.
  - Leaves narrow-oblong (1 to 2 in.). Fruit ¾ in. long, under ½ in. broad . . . . . 24. *H. clavata*.

- Leaves mixed linear-terete and flat, or some or all linear-terete and divided. Western species.
- Leaves narrow-linear or rarely terete, entire or pinnate, grooved underneath. Fruit large, with a long straight beak . . . . . 25. *H. orthorrhyncha*.

- Leaves some linear-terete and some linear and flat, all entire, not grooved. Perianth loosely villous. Fruit rather large, with a short inflexed beak . . . . . 26. *H. Candolleana*.
- Leaves all or almost all terete and divided. Perianth villous.  
Fruit narrow.  
Leaves mostly  $1\frac{1}{2}$  to 3 in., with 3 segments; a few often entire and flat. Stigmatic disk broad . . . . . 27. *H. trifurcata*.
- Leaves mostly 1 in. with 3 or 5 segments. Stigmatic disk oblong-linear . . . . . 28. *H. erinacea*.
- Leaves all entire, linear-terete.  
Western species.  
Leaves thick, 3 to 5 in. long. Perianth above 4 lines.  
Fruit globular, smooth,  $1\frac{1}{4}$  to 2 in. diameter. Seeds winged all round . . . . . 29. *H. platysperma*.
- Leaves slender, 1 to 3 in. Perianth 1 line. Fruit compressed, rugose, 1 in. diameter. Seeds winged all round 30. *H. brachyptera*.
- Leaves slender, 1 to 3 in. Perianth small. Fruit under 1 in., smooth, thick, broadly beaked. Seed-wing decurrent on one side . . . . . 31. *H. Kippistiana*.
- Leaves thick, short. Perianth 2 lines. Fruit narrow, two-horned. Seed-wing decurrent on one side . . . . . 32. *H. Preissii*.
- Eastern species.  
Fruit-beak straight or obsolete.  
Fruit narrow, with an obliquely transverse crestlike rugose prominence below the beak . . . . . 33. *H. pugioniformis*.
- Fruit with a broad gibbous base and scarcely distinct broad beak, without any crest . . . . . 34. *H. Pampliniana*.
- Fruit ovoid, nearly smooth, with a broad smooth dark line down each suture . . . . . 35. *H. vittata*.
- Fruit recurved at the base, then incurved with an inflexed beak.  
Fruit rugose. Stigmatic disk with a central cone.  
Fruit above 1 in. long,  $\frac{3}{4}$  in. broad . . . . . 36. *H. rostrata*.  
Fruit  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long, under  $\frac{1}{2}$  in. broad . . . . . 37. *H. rugosa*.  
Fruit smooth. Stigmatic disk flat . . . . . 38. *H. epiglottis*.
- SERIES 3. *Glabrifloræ*.**—Perianth glabrous. Torus straight or slightly oblique, the gland semiannular or none.
- Leaves flat, 1-nerved or obscurely pinniveined. Western species, except *H. saligna*.  
Leaves prickly-toothed or lobed, stem-clasping at the base.  
Leaves 4 to 8 in. long, gradually expanded at the base into large prickly-toothed auricles . . . . . 39. *H. amplexicaulis*.
- Leaves  $1\frac{1}{2}$  to 3 in., more or less obovate or oblong-cuneate, usually contracted near the base . . . . . 40. *H. glabella*.
- Leaves  $1\frac{1}{2}$  to 3 in., narrow, dilated at the end, with 3 to 5 prickly teeth or lobes, auriculate at the base . . . . . 41. *H. auriculata*.
- Leaves distinctly petiolate, obovate, undulate and prickly-toothed . . . . . 42. *H. cristata*.
- Leaves linear-lanceolate, sessile, prickly-toothed or entire . . . . . 43. *H. linearis*.
- Leaves 3 to 4 in., oblong-cuneate, entire. Umbels axillary, pedunculate . . . . . 44. *H. stenocarpoides*.
- Leaves small, petiolate, entire, with a fine point. Branches hirsute with long hairs. Inflorescence terminal . . . . . 45. *H. ruscifolia*.
- Leaves lanceolate, obtuse, entire. Eastern species . . . . . 46. *H. saligna*.
- Leaves terete. Eastern species.  
Style at least twice as long as the perianth.  
Leaves undivided. Fruit 2 horned. Seed-wing scarcely decurrent . . . . . 47. *H. verrucosa*.

Leaves divided. Fruit scarcely horned. Seed-wing decurrent all round the nucleus . . . . .	48. <i>H. purpurea</i> .
Style not twice as long as the perianth.	
Pedicels pubescent or hirsute, perianth alone glabrous.	
Branches densely villous. Fruit as broad as long, with a short incurved beak . . . . .	49. <i>H. gibbosa</i> .
Branches glabrous or scarcely pubescent.	
Perianth 1 line long.	
Fruit as broad as long, straight and obtuse.	
Leaves rather stout . . . . .	50. <i>H. propinqua</i> .
Fruit narrower than long, with a slightly incurved beak. Leaves slender . . . . .	51. <i>H. nodosa</i> .
Perianth 2 lines long or more . . . . .	52. <i>H. acicularis</i> .
Pedicels glabrous as well as the flower.	
Flowers in short racemes, the peduncle and rhachis $\frac{1}{3}$ to $\frac{3}{4}$ in. long . . . . .	53. <i>H. leucoptera</i> .
Flowers in sessile clusters.	
Leaves all terete. Fruit $1\frac{1}{2}$ in. long and nearly as broad. Seed-wing decurrent all round the nucleus . . . . .	54. <i>H. cycloptera</i> .
Leaves some terete and some flat. Fruit $\frac{1}{2}$ in. long $\frac{1}{4}$ in. broad. Seed-wing not decurrent . . . . .	55. <i>H. microcarpa</i> .
Leaves terete. Western species. Pedicels always glabrous.	
Leaves 3 to 5 in., rigid, thick, spreading or recurved. Perianth 3 lines long . . . . .	56. <i>H. revurva</i> .
Leaves $\frac{3}{4}$ to $1\frac{1}{2}$ in. long, terete and smooth.	
Branches tomentose. Perianth 2 lines. Racemes or clusters mostly terminal. Seed-wing decurrent all round the nucleus . . . . .	57. <i>H. circumalata</i> .
Quite glabrous. Racemes or clusters mostly axillary.	
Perianth near 3 lines. Fruit about $\frac{1}{2}$ in. long. Seed-wing decurrent on one side of the nucleus . . . . .	58. <i>H. commutata</i> .
Perianth 2 lines. Fruit $1\frac{1}{2}$ to 2 in. long, very thick and broad. Seed-wing decurrent all round the nucleus . . . . .	59. <i>H. strumosa</i> .

SECT. 3. **Conogynoides.**—Racemes usually short or reduced to sessile clusters, rarely elongated, enclosed before their development in an involucre or bud of imbricate scales. Perianth glabrous, revolute under the limb. Stigmatic cone erect or scarcely oblique.

SERIES 1. **Longistylæ.**—Leaves flat, entire, obolong-lanceolate or narrow. Style at least twice as long as the perianth. Stigmatic cone long and narrow. Western species, one also central.

Leaves (6 to 8 in.) very finely many-nerved. Racemes oblong, 1 to 3 in. long . . . . .	60. <i>H. multilineata</i> .
Leaves (4 to 6 in.) 3- or 5-nerved, often falcate, on long petioles. Racemes globular . . . . .	61. <i>H. laurina</i> .
Leaves (under 3 in.) 3-nerved, sessile . . . . .	62. <i>H. obtusa</i> .
Leaves (4 to 7 in.) very thick, narrow, very prominently tripli-nerved, tapering at the base . . . . .	63. <i>H. cinerea</i> .
Leaves (under 3 in.) thick, 1-nerved, tapering to the base. Flower-clusters almost verticillate . . . . .	64. <i>H. corymbosa</i> .

SERIES 2. **Petiolares.**—Leaves broad, triplinerred and reticulate (the veins prominent or obscure), tapering into a distinct petiole. Style not twice as long as the perianth. Western species.

Leaves prickly-toothed, prominently-veined . . . . .	65. <i>H. undulata</i> .
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Leaves quite entire.

- Leaves prominently veined. Perianth near 3 lines long.  
Fruit with a rather long straight beak.
- Leaves acuminate. Petiole long. Seed-wing decurrent on both margins . . . . . 66. *H. petiolaris*.
- Leaves scarcely acuminate. Petiole short. Seed-wing decurrent on one margin only. . . . . 67. *H. neurophylla*.
- Leaves obscurely veined. Perianth about 2 lines. Fruit with a short slightly curved beak . . . . . 68. *H. loranthifolia*.

**SERIES 3. Sessiles.**—Leaves broad to oblong lanceolate, 3- or more-nerved and reticulate, sessile or nearly so. Western species.

- Leaves (of the flowering stems) broadly orbicular-cordate, entire or prickly-toothed . . . . . 69. *H. cucullata*.
- Leaves ovate to ovate-lanceolate, acute or acuminate, entire.  
Leaves glabrous, often cordate, shortly acuminate. Fruit 1 in. long, including the long beak . . . . . 70. *H. ferruginea*.
- Leaves usually pubescent, acutely acuminate, never cordate.  
Fruit  $\frac{1}{2}$  in. long, not distinctly beaked . . . . . 71. *H. smilacifolia*.
- Leaves obtuse or with a small callous point.  
Leaves broadly oval or elliptical, several-nerved . . . . . 72. *H. elliptica*.  
Leaves oblong-elliptical to lanceolate, 3-nerved . . . . . 73. *H. ambigua*.

**SERIES 4. Nervosæ.**—Leaves lanceolate or linear, prominently 3- or more-nerved (rarely 2- or 1-nerved when very narrow), smooth between the nerves.

- Eastern species. Seed-wing decurrent on one side of the nucleus.  
Leaves 4 to 6 in. long, falcate, 5- to 9-nerved. Perianth 2 lines long . . . . . 74. *H. plurinervia*.
- Leaves lanceolate or linear-lanceolate, usually 3-nerved.  
Perianth 1 line long.  
Leaves usually lanceolate, obtuse or acute, not pungent.  
Pedicels silky-pubescent . . . . . 75. *H. dactyloides*.
- Leaves usually linear-lanceolate or linear, pungent-pointed.  
Pedicels glabrous . . . . . 76. *H. ulicina*.
- Western species. Seed-wing decurrent all round the nucleus.  
Leaves linear-lanceolate, 3-nerved, under 3 in. long . . . . . 77. *H. falcata*.  
Leaves linear, very thick and silky, 4 to 8 in. long . . . . . 78. *H. pycnoneura*.

**SERIES 5. Uninerves.**—Leaves narrow or small, flat, 1-nerved with nerve-like margins. Fruit-valves without dorsal appendages. Western species.

- Leaves linear, very thick and silky, 4 to 8 in. long . . . . . 78. *H. pycnoneura*.
- Leaves linear or lanceolate,  $1\frac{1}{2}$  to 4 in. long. Fruit 1 to  $1\frac{1}{2}$  in. long, 2 to 3 lines broad . . . . . 79. *H. stenocarpa*.
- Leaves lanceolate,  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. long. Fruit  $\frac{3}{4}$  in. long, 3 to 4 lines broad . . . . . 80. *H. marginata*.
- Leaves mostly ovate,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long, with a long point . . . . . 81. *H. myrtoides*.
- Leaves linear, pungent-pointed, under  $\frac{1}{2}$  in. long, the keel or midrib very prominent underneath . . . . . 82. *H. costata*.

**SERIES 6. Enerves.**—Leaves mostly flat, obscurely penniveined, the midrib not prominent, entire prickly-toothed or lobed. Fruit-valves with dorsal horns or protuberances. Western species.

- Leaves oblong-lanceolate, quite entire or very rarely with 1 or 2 minute teeth . . . . . 83. *H. oleifolia*.
- Leaves lanceolate, acute, mostly prickly-toothed . . . . . 84. *H. florida*.
- Leaves more or less cuneate or pinnatifid with prickly teeth or lobes, thick and here and there almost terete . . . . . 85. *H. varia*.

SERIES 7. **Teretifoliae.** Leaves linear-terete entire, usually angular or striate (rarely a few flat ones intermixed). Fruit-valves without dorsal appendages. Western species except *H. flexilis*.

Leaves sulcate, occasionally flat.

- Fruit ovoid; beak straight. Flowers in close clusters . . . 86. *H. sulcata*.
- Fruit small, ovoid-globular, with an inflexed beak. Flowers in short dense racemes . . . . . 87. *H. Meissneriana*.
- Leaves very finely striate. Fruit-beak straight . . . . . 88. *H. subsulcata*.
- Leaves angular or terete and smooth.
- Fruit muricate with fringed tubercles. Western species . . . 89. *H. Lehmanniana*.
- Fruit smooth or rugose. Eastern species . . . . . 90. *H. flexilis*.

SECT. 4. **Manglesioides.**—Racemes short or reduced to sessile clusters, enclosed before their development in an involucre or bud of imbricate scales. Perianth glabrous, straight, the limb erect in the bud. Stigmatic cone erect. Western species.

- Leaves obovate oblong or lanceolate, entire or prickly-toothed . 91. *H. nitila*.
- Leaves terete (under 2 in.), smooth, undivided, pungent-pointed 92. *H. Oldfieldii*.
- Leaves terete (3 to 4 in.), simply pinnate or also undivided, stout . . . . . 93. *H. suaveolens*.
- Leaves terete (1 to 1½ in.), twice or simply pinnate with few segments.
- Rhachis of the clusters under ¼ in. long. Fruits ½ to ¾ in.

  - long, with short dorsal horns . . . . . 94. *H. lissocarpa*.
  - Rhachis of the racemes ½ to ½ in. long. Fruits ¾ to 1 in.

    - long, with long dorsal horns . . . . . 95. *H. bipinnatifida*.

*H. carduiifolia*, Lodd., *H. echinata*, Mackay, *H. Lamberti*, Sweet, *H. latifolia*, Lodd., and *H. subulata*, Cunn., entered in Steud. Nom. Bot. ed. 2, are garden names without descriptions, belonging probably to some of the species here enumerated.

*H. longifolia* and *H. tenuifolia*, Dunal, Cours. 1, Roem. and Schult. Syst. iii. 425, are also garden plants described only as to their foliage, and quite insufficiently for recognition.

SECT. 1. **GREVILLEOIDES.**—Flowers in oblong or cylindrical or rarely short racemes, without any involucre as far as known. Perianth much revolute, opening early on the lower side. Stigmatic disk oblique or lateral, flat or broadly conical. Species all tropical or subtropical.

1. **H. chordophylla**, F. Muell. in Hook. Kew Journ. ix. 23. A tree perfectly glabrous and more or less glaucous. Leaves terete, smooth, mostly from ½ to 1 ft. long. Racemes from the old wood, loosely cylindrical, 3 to 4 in. long, quite glabrous. Pedicels about ¼ in. long. Perianth glabrous, the tube 4 to 5 lines long, much dilated and oblique at the base, revolute under the limb. Torus very oblique. Gland large, horseshoe-shaped. Ovary stipitate; style long; stigmatic disk broad, oblique, not convex. Fruit obliquely lanceolate, about 1½ in. long and ½ in. broad near the base, tapering into a short slightly incurved beak. Seed-wing not decurrent along the nucleus.—Meissn. in DC. Prod. xiv. 699.

**N. Australia.** Sturt's Creek, F. Mueller (the perianth-tube scarcely 4 lines long); Kekwick springs, Waterhouse (the perianth-tube fully 5 lines long).

2. **H. Cunninghamii**, R. Br. Prot. Nov. 26. A small tree of 12 to 16 ft. Leaves terete, rigid, mostly above 1 ft. long, but usually not so long as in *H. lorea*. Racemes lateral on the old wood, loosely cylind-

drical, 3 to 6 in. long, the rhachis pedicels and perianths clothed with appressed silky hairs. Pedicels 3 to 5 lines long. Perianth-tube 4 to 5 lines long, somewhat dilated and very oblique at the base, attenuate and revolute under the limb. Torus very oblique. Gland large, horseshoe-shaped. Ovary on a long stipe. Style very long, slightly clavate under the oblique convex or broadly conical stigmatic disk. Fruit obliquely ovate-lanceolate,  $1\frac{1}{4}$  to  $1\frac{1}{2}$  in. long and  $\frac{3}{4}$  in. thick. Seed-wing not decurrent along the nucleus or only very shortly so on the upper margin.—Meissn. in DC. Prod. xiv. 394; *H. longifolia*, A. Cunn. Herb.; F. Muell. Fragm. vi. 190.

**N. Australia.** Bay of Rest, N.W. coast, A. Cunningham; Nichol Bay, *F. Gregory's Expedition*; Victoria river, F. Mueller.

3. ***H. lorea***, R. Br. Prot. Nov. 25. A tall shrub or tree attaining 20 ft. Leaves terete, smooth, often above 2 ft. long and rarely under 1 ft., very rarely (on barren branches? or young plants?) a few once or even twice forked or trifid. Racemes cylindrical, in the upper axils, sometimes forked or in a terminal cluster, more dense than in *H. Cunninghamii*, from under 3 in. to fully 6 in. long, the rhachis pedicels and perianths densely pubescent with shorter hairs much less appressed than in *H. Cunninghamii*. Perianth-tube nearly 4 lines long, slightly dilated below the middle, revolute upwards. Torus oblique but less so than in *H. Cunninghamii*. Gland large, horseshoe-shaped. Ovary stipitate; style long, with a very oblique broadly conical stigmatic disk.—Meissn. in DC. Prod. xiv. 394; F. Muell. Fragm. vi. 189; *Grevillea lorea*, R. Br. in Trans. Linn. Soc. x. 177, Prod. 380.

**N. Australia.** Attack Creek, *M'Douall Stuart's Expedition*.

**Queensland.** Shoalwater Bay, R. Brown; Port Denison, Fitzalan; Rockhampton, Thozet; Cape river and Nerkool Creek, Bowman; Dyngie, Miss Ross; also in Leichhardt's collection.

Several of the above-quoted specimens are not in flower, and are therefore in some measure doubtful.

4. ***H. Fraseri***, R. Br. Prot. Nov. 26. A tall shrub, the branches much more slender than in *H. lorea*, of which it may possibly be a variety. Leaves much more slender, 4 to 8 in. long. Racemes only 1 to 2 in. long. Pedicels 2 to 3 lines. Flowers of *H. lorea*, but smaller, the perianth-tube not above 3 lines long. Fruit unknown in both species.—Meissn. in DC. Prod. xiv. 394.

**N. S. Wales.** Hastings river, Fraser, and probably from the same neighbourhood, *Herb. F. Mueller*, apparently from Leichhardt.

5. ***H. macrocarpa***, A. Cunn. in R. Br. Prot. Nov. 30. A tree of 15 to 20 ft. of robust growth with a rugged bark. Leaves linear-lanceolate, 6 to 8 in. long, 2 to 5 lines broad, mostly obtuse, tapering at the base, thick, minutely silky-pubescent on both sides, the veins longitudinal, slightly anastomosing, scarcely prominent. Racemes loosely cylindrical, 3 to 6 in. long, tomentose-pubescent as in *H. lorea*. Pedicels 2 to 5 lines long. Perianth-tube about 5 lines, oblique, dilated





below the middle, revolute upwards. Torus oblique. Gland large, semicircular. Ovary shortly stipitate, style rather thick, not long; stigmatic disk oblique, broadly conical. Fruit ovate-lanceolate,  $1\frac{1}{2}$  to  $1\frac{3}{4}$  in. long, 7 to 8 lines broad.—Meissn. in DC. Prod. xiv. 411; F. Muell. Fragm. vi. 191; *Grevillea Alphonsiana*, F. Muell. in Hook. Kew Journ. ix. 22; Meissn. l.c. 699.

**N. Australia.** Arid shores of Cygnet Bay, N.W. coast, A. Cunningham; Roebuck Bay and Glenelg river, Marti; remrest parts of Sturt's Creek, F. Mueller.

**W. Australia.** Three hundred miles up the Murchison river, Walcott.

6. **H. arborescens**, R. Br. in *Trans. Linn. Soc.* x. 187, *Prod.* 386. A tall shrub or small tree, the young shoots silky. Leaves linear linear-lanceolate or sometimes rather broader and slightly falcate, obtuse or acuminate, contracted at the base, longitudinally but obscurely several-veined, minutely silky-pubescent on both sides, 3 to 6 in. long. Flowers small, in short dense almost globular racemes or clusters on lateral peduncles of  $\frac{1}{4}$  to  $\frac{1}{2}$  in., often on the old wood. Pedicels filiform, 1 to 2 lines long. Perianth silky-pubescent, the tube slender, scarcely  $1\frac{1}{2}$  lines long, revolute under the limb. Torus straight. Gland semiannular, not very prominent. Ovary shortly stipitate. Stigmatic disk nearly straight with a short broad cone. Fruit nearly straight,  $1\frac{1}{2}$  to nearly 2 in. long, 1 in. broad, very shortly beaked. Seed-wing decurrent along the upper margin of the nucleus to the base.—Meissn. in DC. Prod. xiv. 410.

**N. Australia.** Islands of the Gulf of Carpentaria, R. Brown, Henne; Copeland island, A. Cunningham; Victoria river, F. Mueller; Port Essington, Armstrong.

**Queensland.** Rockingham Bay, Dallachy; Mount Elliott, Fitzalan.

7? **H. stenophylla**, A. Gunn.; Meissn. in DC. Prod. xiv. 417. A small tree of 12 to 15 ft., glabrous or the young shoots minutely hoary. Leaves very narrow-linear, entire, flat, 2 to 4 in. long, rather thick, veinless or with a scarcely prominent midrib. Flowers unknown. Fruit rather above 1 in. long,  $\frac{3}{4}$  in. thick, smooth with a very short conical straight beak. Seed-wing broad, more or less decurrent all round the nucleus.

**N. Australia.** Arid sands, Bay of Rest, N.W. coast, A. Cunningham.—Appears allied to *H. arborescens*, but the affinities must be very uncertain until the flowers are known.

8. **H. trineura**, F. Muell. Fragm. iii. 146. A tree?, the branches and foliage very minutely hoary-tomentose. Leaves oblong-cuneate or lanceolate, obtuse, contracted into a short petiole, 3 to 5 in. long, rather thick, triplinerved and very obliquely almost longitudinally veined, the margins nerve-like, not recurved, the veins equally conspicuous on both sides. Racemes axillary, about 2 in. long. Pedicels  $\frac{1}{2}$  to 1 in. long. Perianth glabrous as well as the whole inflorescence, the tube fully 3 lines long, revolute under the globular limb. Torus straight. Gland thick, semicircular. Ovary shortly stipitate; style long; stigmatic disk oblique, broad, conical in the centre. Fruit  $1\frac{1}{2}$  in. long,  $\frac{3}{4}$  in. thick, smooth, slightly incurved, scarcely beaked. Seed-wing shortly

decurrent on the upper margin of the nucleus.—*Grevillea trineura*, F. Muell. l.c.

**Queensland.** Broad Sound, *Bowman*; Rockhampton, *Thorct.*

**SECT. 2. EUHAKEA.**—Racemes usually short or reduced to sessile clusters, enclosed before their development in an involucre or bud of imbricate scales, falling off very early. Perianth revolute either from the middle or close under the limb. Stigmatic disk oblique or lateral, flat or slightly convex, very rarely (in *H. rugosa* and *H. rostrata*) with a central cone, and those species differing from *Comogynoides* in the pubescent perianth and short cone.

**SERIES 1. OBLIQUE.**—Perianth pubescent. Torus oblique, the ovary inserted at the shortest margin, the remainder occupied by a large very concave adnate gland.

**9. *H. cyclocarpa*,** Lindl. *Swan Riv. App.* 36. A shrub of 5 or 6 ft., the branches and foliage glabrous in our specimens. Leaves oblong-lanceolate, acute or obtuse, but not rounded at the end, tapering from the middle into a short petiole, 4 to 8 in. long, thick, entire, with obscure longitudinal veins, sometimes nearly  $1\frac{1}{2}$  in. broad in the middle. Flowers in axillary clusters or very short racemes. Pedicels silky-pubescent, 2 to 3 lines long. Perianth silky-pubescent, about 5 lines long, reflexed under the globular limb. Torus oblique, the greater portion occupied by a large very concave gland. Ovary shortly stipitate at the lower margin; style not long; stigmatic disk oblique. Fruit  $1\frac{1}{2}$  in. long, 1 in. broad, compressed, recurved at the base, then incurved, with a broad inflexed beak, the valves with a dorsal truncate protuberance at the top. Seed-wing narrowly decurrent on the upper margin.—Meissn. in *Pl. Preiss.* i. 573, and in *DC. Prod.* xiv. 415.

**W. Australia.** Swan river to King George's Sound, *Drummond*, n. 108, 279, 1st coll. n. 609, *Preiss.* n. 576, *Harvey*.—The shape of the fruit is near that of *H. rostrata* and its allies, the flowers and foliage very different.

**10. *H. crassifolia*,** Meissn. in *Pl. Preiss.* i. 570, and in *DC. Prod.* xiv. 412. A tall shrub, attaining 12 to 15 ft., the branches closely tomentose, the adult foliage glabrous. Leaves mostly oblong, broad or narrow, rounded at the end with a small callous point, shortly contracted at the base,  $1\frac{1}{2}$  to 3 in. long, very thick, with obscure longitudinal veins. Racemes short, shortly pedunculate, axillary, the rhachis and peduncle together 3 or 4 lines long. Pedicels silky-pubescent, about 3 lines long. Perianth silky-pubescent, the tube fully 5 lines long, revolute under the ovoid almost acuminate limb. Torus oblique, the upper portion occupied by a large concave gland. Ovary nearly sessile on the lower margin; style not long, thickened under the oblique stigmatic disk. Fruit nearly  $1\frac{1}{2}$  in. long and broad, neither rugose nor cristate, yet not smooth. Seed-wing decurrent down both sides round the base of the nucleus.

**W. Australia,** *Drummond*, 4th coll. n. 293; sand plains, Kalgan river, *Oldfield*; Stirling Range to E. Mount Barren, *Maxwell*.

11. **H. pandanicarpa**, R. Br. *Prot. Nov.* 29. An erect shrub, rarely over 6 ft. high, the young shoots hoary or silky, the adult foliage glabrous. Leaves narrowly oblong-cuneate, obtuse with a callous point, tapering into a short petiole and often shortly decurrent on the branch, 2 to 4 in. long, thick and veinless or with a few obscure longitudinal veins. Racemes short, axillary, silky-pubescent, the rachis often  $\frac{1}{2}$  in. long, the pedicels 3 to 4 lines. Perianth silky-pubescent, the tube about 5 lines long, revolute under the ovoid limb. Torus very oblique, the upper portion occupied by a large concave gland. Ovary nearly sessile, very spreading from the lower margin of the torus. Style not long; stigmatic disk oblong, almost lateral. Fruit the largest of the genus, ovoid-globular, 2 to  $2\frac{1}{2}$  in. diameter, covered with large conical protuberances resembling the drupes of a *Pandanus* fruit but very hard. Seed-wing surrounding the nucleus, but broader above than below.—Meissn. in DC. *Prod. xiv.* 412; Hook. Ic. Pl. t. 434.

**W. Australia.** Towards Cape Arid, *Barter*; gravelly coast hills, Stokes Inlet to Cape Le Grand, Cape Arid, Cape Paisley, and Russell Range, *Maxwell*.

12. **H. Roei**, Benth. Branches minutely hoary. Leaves lanceolate or oblong-linear, mucronate, sometimes falcate, tapering into a short petiole,  $1\frac{1}{2}$  to  $2\frac{1}{2}$  in. long, thick, veinless or obscurely marked with a few longitudinal veins. Flowers few in sessile axillary clusters. Pedicels 2 to 3 lines long, silky-ferruginous as well as the flowers. Perianth-tube 4 or 5 lines long, recurved under the globular limb. Torus very oblique, the upper portion occupied by a large concave gland. Ovary shortly stipitate from the lower margin of the torus; style not long, slightly thickened under the broad lateral stigmatic disk.

**W. Australia**, J. S. Roe. The foliage is nearly that of *H. incrassata*, the flowers very different, the fruit unknown.

13. **H. adnata**, R. Br. *Prot. Nov.* 26. A rigid bushy shrub of 3 or 4 ft., the young branches hoary, the adult foliage glabrous. Leaves terete, smooth, with a straight or incurved point, attenuate at the base, mostly 2 to 3 in. long. Flowers few together in axillary clusters on silky pedicels of 1 to 2 lines. Perianth silky-pubescent, the tube 3 to  $3\frac{1}{2}$  lines long, revolute under the globular limb. Torus oblique, but not so much so as in *H. obliqua*, the greater portion occupied by the large concave gland. Ovary almost sessile at the lower margin of the torus; style not very long, dilated at the end into a large oblique concave disk with the stigma prominent in the centre. Fruit 1 to  $1\frac{1}{2}$  in. long and 1 in. broad, very oblique, much compressed and smooth when nearly ripe, very thick and sometimes rugose when perfect, with a small conical inflexed beak, without dorsal appendages to the valves. Seed-wing as broad as the capsule, decurrent along the upper margin and very narrowly so along the lower margin of the nucleus.—Meissn. in DC. *Prod. xiv.* 396; *H. lativalvis*, F. Muell. *Fragm. vi.* 219.

**W. Australia.** South coast, *Barter*; sand plains north of Cape Arid, Esperance Bay and Russell Range, *Maxwell*.

**14. *H. obliqua*,** *R. Br.* in *Trans. Linn. Soc.* x. 180, *Prod.* 382. A spreading shrub of 2 or 3 ft., the branches minutely hoary-pubescent, the foliage glabrous. Leaves terete, smooth, rigid, mucronate, 1 to 2 in. long, thick and divaricate in some specimens, twice as long, thinner and more erect in others. Flowers in sessile axillary clusters. Pedicels 1 to 1½ lines long. Perianth silky, the tube 3 lines long or rather more, revolute under the ovoid shortly acuminate limb. Torus very oblique, the greater part occupied by a large concave gland. Ovary shortly stipitate at the lower margin of the torus; style not very long with a broad lateral stigmatic disk umbonate in the centre. Capsule recurved at the base, about 1 in. long and ½ in. broad, rugose, with a short straight conical beak, without dorsal appendages. Seed-wing decurrent along both margins round the base of the nucleus.—Meissn. in DC. *Prod.* xiv. 395.

**W. Australia.** Lucky Bay, *R. Brown*; between Swan river and King George's Sound, *Drummond*, 2nd coll. n. 329, 330; scrubs north of Stirling Range, *F. Mueller*; Cape Paisley, Cape Le Grand and Orleans Bay, *Maxwell*.

SERIES 2. PUBIFLORÆ.—Perianth pubescent. Torus straight or if oblique the gland, thick or semiannular, inserted on the lowest side.

**15. *H. Hookeriana*,** *Meissn.* in DC. *Prod.* xiv. 412. A tree of 15 to 20 ft., the young branches minutely silky-pubescent, the foliage glabrous. Leaves oblong-spathulate or lanceolate, very obtuse, entire, tapering into a short petiole, 3 to 4 in. long, ½ to 1 in. wide, very thick, with faintly visible longitudinal veins. Flowers small, in sessile axillary clusters. Pedicels silvery-silky, not 1 line long. Perianth pubescent with small appressed reddish hairs, the tube about 2 lines long, rather broad, reflexed under the ovoid-globular limb. Torus straight. Gland semiannular. Ovary nearly sessile; style not long; stigmatic disk oblique. Fruit very thick, almost didymous, oblique, 2 to 2½ in. long and nearly 2 in. broad, broadly furrowed along the upper suture, rugose with irregular raised lines, the beak very short or obtuse. Seed-wing scarcely decurrent.

**W. Australia.** *Drummond*, 5th coll. n. 413; E. Mount Barren Range, *Maxwell*.—The contrast of the white pedicels and reddish flowers is very evident in the dried specimens.

**16. *H. incrassata*,** *R. Br. Prot.* Nov. 29. A shrub of 2 or 3 ft., with tomentose branches. Leaves oblong-linear or linear-lanceolate, acute but scarcely pungent, entire, contracted into a very short petiole, 1 to 2 or rarely 3 in. long, thick and veinless or obscurely 3-nerved. Flowers very small, in sessile axillary clusters. Pedicels about 2 lines long, hirsute. Perianth hirsute, the tube scarcely 1½ lines long, much revolute, the upper segments short. Torus small. Gland rather broad. Ovary very shortly stipitate; style short, with a large lateral stigmatic disk. Fruit globular, 1 to near 1½ in. diameter, smooth with a few rough blotches, slightly furrowed at the sutures, with a very short inflexed beak on the upper side. Seed-wing broadly decurrent down

both sides of the nucleus.—Meissn. in DC. Prod. xiv. 411; Hook. Ic. Pl. t. 442; *H. leucadendron*, Meissn. in Pl. Preiss. i. 572, and in DC. Prod. xiv. 411.

**W. Australia.** Swan river, *Fraser, J. S. Roe, Drummond*, n. 100, 1st coll. n. 603, *Preiss*, n. 568, 578; Belgarup, Oldfield.

17. **H. flabellifolia**, Meissn. in Hook. *Kew Journ.* vii. 116, and in DC. Prod. xiv. 409. An erect shrub, with minutely hoary branches or quite glabrous. Leaves cuneate but not so broad as in *H. Baxteri* and rather truncate than rounded at the toothed end, tapering into a long petiole,  $1\frac{1}{2}$  to 2 in. long,  $\frac{3}{4}$  to 1 in. broad at the end, very thick and obscurely veined. Flowers in axillary clusters, much smaller than in *H. Baxteri*. Pedicels not 1 line long. Perianth silky-pubescent, the tube under 3 lines long, revolute under the globular limb. Torus nearly straight. Gland thick, not very large. Ovary very shortly stipitate; style not very long, with an oblique stigmatic disk. Fruit unknown.

**W. Australia.** Between Moore and Murchison rivers, *Drummond*, 6th. coll. n. 196.

18. **H. Brownii**, Meissn. in Pl. Preiss. i. 569, and ii. 261, and in DC. Prod. xiv. 409. Very closely allied to *H. Baxteri*, and perhaps a variety. Leaves rather thicker, the veins less conspicuous and the teeth shorter and less prickly. Flowers quite the same. Fruit rather broader than in *H. Baxteri*, the very small beak more oblique and the seed-wing decurrent down both margins of the nucleus.

**W. Australia**, *Drummond*, 4th coll. n. 296, *Preiss*, n. 552.

19. **H. Baxteri**, R. Br. *Prot. Nov.* 28. An erect shrub of 6 to 8 ft., glabrous or the young shoots and branches minutely hoary-pubescent. Leaves very broadly cuneate fan-shaped or almost reniform, the broad rounded end undulate and shortly prickly-toothed, contracted into a distinct but broad petiole, shortly decurrent on the stem, thick, with obscure radiating branching veins,  $1\frac{1}{2}$  to  $2\frac{1}{2}$  in. broad. Flowers in sessile axillary clusters. Pedicels rarely above 1 line long. Perianth ferruginous-pubescent, the tube broad, 3 to  $3\frac{1}{2}$  lines long, contracted above the middle and revolute under the ovoid limb. Torus oblique. Gland thick, semicircular. Ovary very shortly stipitate, spreading from the base; style long; stigmatic disk oblique. Fruit about  $1\frac{1}{2}$  in. long, 1 in. broad, rugose, shortly beaked. Seed-wing decurrent down the upper margin of the nucleus to the base, but not along the lower margin.—Meissn. in Pl. Preiss. i. 569, and in DC. Prod. xiv. 409; Hook. Ic. Pl. t. 439.

**W. Australia.** King George's Sound or to the eastward, *Baxter, Drummond*, n. 161, 4th coll. n. 295; Cape Riche, *Preiss*, n. 553, *Maxwell*; Stirling Range, *F. Mueller*.

20. **H. ceratophylla**, R. Br. in *Trans. Linn. Soc.* x. 184, *Prod.* 384. An erect or spreading shrub of 2 to 5 ft., the young shoots slightly silky-pubescent, the adult foliage glabrous. Leaves remarkably diver-

sified in form, usually narrow, more or less cuneate, tapering into a long base, irregularly and deeply divided in the upper half into 3 unequal coarsely toothed lobes, but a few leaves sometimes quite entire and linear or linear-lanceolate, or the whole leaf narrow and pinnately divided into short and broad or long and narrow divaricate lobes, or the 3 lobes long, narrow, and toothed, or all 3 broadly cuneate and 3- or 5-lobed, the whole leaf 2 to 4 in. long, or longer when very narrow, thick and irregularly almost longitudinally veined, the veins obscure or equally prominent on both sides, the lobes or teeth pointed and often pungent. Flowers in small sessile clusters, axillary or at the old nodes. Pedicels 1 to 2 lines long, silky. Perianth ferruginous-pubescent, the tube 2 to  $2\frac{1}{2}$  lines long, revolute under the globular limb. Torus oblique. Gland large, very prominent, concave. Ovary very shortly stipitate and spreading from the lower margin of the torus; style not very long, with a broad oblique stigmatic disk. Fruit nearly 1 in. long, about  $\frac{1}{2}$  in. broad. Seed-wing decurrent on the upper margin only of the nucleus.—Meissn. in Pl. Preiss. i. 569, and in DC. Prod. xiv. 410; Reichb. Ic. et Deser. Pl. t. 24; *Conchium ceratophyllum*, Sm. in Trans. Linn. Soc. ix. 124; *Hakea acanthophylla*, Link. Enum. Hort. Berol. i. 118; *H. laciniosa*, F. Muell. Fragm. iv. 49.

**W. Australia.** King George's Sound and adjoining districts, *R. Brown*, *Drummond*, n. 16, 2nd coll. n. 334, *Preiss*, n. 579, 580, and many others.

Var. *elongata*. Leaves narrow linear, 4 to 6 in. long, entire or with a few distant linear lobes, but readily distinguished from those of *H. orthorrhyncha* by the midrib if present, prominent on both sides and not grooved underneath. *Drummond*, (3rd coll.?) n. 297.

21. ***H. lasiantha***, *R. Br. Prot. Nov.* 29. A shrub attaining 6 to 8 ft., the branches densely tomentose-villous. Leaves oblong lanceolate or oval-elliptical, with a short rigid callous point, contracted into a short petiole, 1 to  $1\frac{1}{2}$  or sometimes 2 in. long, thick, entire, nerveless or very obscurely and almost longitudinally pinniveined, ferruginous-silky when young, at length glabrous. Flowers not numerous, in axillary clusters. Pedicels villous, 1 to 2 lines long. Perianth densely villous with spreading hairs, the tube 3 to 4 lines long, recurved under the limb. Torus small. Gland prominent. Ovary nearly sessile; style short, with a large lateral stigmatic disk. Fruit about 1 in. long and 4 lines broad, somewhat incurved, smooth, with a short beak. Seed-wing decurrent on the upper side only to below the nucleus.—Meissn. in Pl. Preiss. i. 571, and in DC. Prod. xiv. 411.

**W. Australia.** King George's Sound or adjoining districts, *Baxter*, *Drummond*, n. 96, and others; Arthur river, *Oldfield*; Stirling range and Gordon river, *Maxwell*.

Var. *angustifolia*. Leaves lanceolate,  $1\frac{1}{2}$  to 3 in. long, approaching those of *H. eriantha*. Fruit  $1\frac{1}{2}$  in. long, 3 to 4 lines broad.—W. Australia, *Drummond*, n. 21.

22. ***H. eriantha***, *R. Br. Prot. Nov.* 29. A tall shrub or small tree, the young shoots silky-pubescent, the adult foliage glabrous. Leaves lanceolate, acuminate, acute or with a callous point, tapering into a short petiole, veinless except the scarcely prominent midrib, of a pale colour like those of *H. saligna* but rather thicker, 3 to 5 in. long.

Flowers in axillary clusters, not very numerous. Pedicels silky-villous, 1 to 2 lines long. Perianth silky, the tube about 3 lines long, reflexed under the almost acute limb. Torus small. Gland prominent, semi-annular. Ovary shortly stipitate; style not very long, with a large lateral stigmatic disk. Fruit about 1 in. long and under  $\frac{1}{2}$  in. broad, slightly incurved, rather smooth, with a short incurved or straight beak, very obscure when the fruit is quite ripe. Seed-wing very shortly decurrent on the upper side only of the nucleus.—Meissn. in DC. Prod. xiv. 417.

**N. S. Wales.** Mount Lindsay, Fraser; Hastings river, Beckler; New England, C. Stuart; Twofold Bay, L. Morton.

**Victoria.** Tambo, Mitta-Mitta to Genoa river in Gipps' Land, F. Mueller.

23? **H. megalosperma**, Meissn. in Hook. Kew Journ. vii. 117, and in DC. Prod. xiv. 417. A tall shrub quite glabrous, the foliage glaucous. Leaves obovate-oblong to narrow oblong, very obtuse, tapering into a short petiole,  $1\frac{1}{2}$  to 3 in. long, very thick, veinless or obscurely pinniveined with the very faint primary veins very oblique. Flowers unknown. Fruit 2 to  $2\frac{1}{2}$  in. long,  $1\frac{1}{2}$  in. broad, smooth, scarcely beaked, the valves with dorsal ridges near the end forming prominent truncate appendages. Seed-wing broadly decurrent on both sides round the base of the nucleus.

**W. Australia.** Mount Lesueur, between Moore and Murchison rivers, Drummond, 6th coll. n. 154.

The affinities of this and the following species must remain very uncertain until the flowers shall be known.

24? **H. clavata**, Labill. Pl. Nov. Holl. i. 31, t. 41. A rigid stout spreading shrub of 3 or 4 ft., our specimens quite glabrous. Leaves narrow-oblong, obtuse with a short very rigid point, contracted at the base, 1 to 2 in. long, very thick and veinless. Flowers unknown. Fruit about  $\frac{3}{4}$  in. long, 4 or 5 lines broad, obtuse, not rugose, the valves with dorsal conical horns at the end. Seed-wing narrowly decurrent at least on the upper side of the nucleus. R. Br. in Trans. Linn. Soc. x. 187, Prod. 386; Meissn. in DC. Prod. xiv. 417; *Conchium clavatum*, Willd. Enum. Hort. Berol. 141.

**W. Australia.** King George's Sound or to the eastward, *Labillardière*, R. Brown, Baxter; Cape Arid, Maxwell.

25. **H. orthorrhyncha**, F. Muell. Fragm. vi. 214. A shrub of 2 or 3 ft., the young branches minutely hoary, the foliage glabrous. Leaves in the typical form narrow-linear, entire or pinnately divided into 3 to 5 segments, mucronate, 3 to 6 in. long, thick but flat, with the margins so closely revolute as to leave only a very narrow depressed line between them on the under side, sometimes contracted into a short terete petiole. Flowers in small sessile clusters chiefly on the old wood. Pedicels 1 to  $1\frac{1}{2}$  lines long. Perianth silky-pubescent, the tube shortly dilated almost gibbous at the base, the longer segments about 5 lines long, much revolute above the middle. Torus straight. Gland very

prominent, semianular. Ovary shortly stipitate; style very long, with a lateral stigmatic disk. Fruit  $1\frac{1}{2}$  in. long or rather more,  $\frac{3}{4}$  in. broad, smooth, tapering into a rather long straight beak. Seed-wing broadly decurrent on the upper side of the nucleus, less so on the lower side.

**W. Australia.** Sandy plains, Murchison river, *Oldfield*.

Var. *filiformis*, F. Muell. Leaves narrower, more often divided, sometimes terete, less distinctly and sometimes not at all grooved—W. Australia, *Drummond*, in fruit only, but probably the same species.

**26. H. Candolleana**, Meissn. in *Pl. Preiss.* ii. 262, and in *DC. Prod.* xiv. 397. Branches virgate, pubescent when young, the foliage glabrous. Leaves some and sometimes nearly all narrow-linear, obtuse or with a callous point, tapering into a short petiole, thick but flat with very obtuse thickened margins, the midrib more or less prominent underneath; others or sometimes nearly all terete or slightly flattened and nerveless, mostly 1 to 2 in. long. Flowers few, in sessile axillary clusters. Pedicels villous, about 1 line long. Perianth villous with spreading hairs,  $1\frac{1}{2}$  to near 2 lines long but very much revolute with the upper segments short. Torus straight. Gland prominent, semi-annular. Ovary contracted into a very short stipe; style not long, with a broad lateral stigmatic disk. Fruit 1 to  $1\frac{1}{2}$  in. long, 7 to 10 lines broad, incurved, nearly smooth, with a short conical inflexed beak. Seed-wing decurrent on both margins of the nucleus.—*H. falcata*, var. Meissn. in *Pl. Preiss.* i. 572.

**W. Australia**, *Drummond*, n. 99, 1st coll. n. 605, 2nd coll. n. 331; Canning river, *Preiss*, n. 603; Hampden, *Clarke*.

Var. *campylorrhyncha*, F. Muell. Leaves nearly all flat and  $1\frac{1}{2}$  lines broad.—Murchison river, *Oldfield*.

The S. Australian *H. flexilis*, R. Br., to which Meissner refers some of Drummond's specimens, is a very different plant in flowers and fruit, although somewhat similar in foliage.

**27. H. trifurcata**, R. Br. in *Trans. Linn. Soc.* x. 183, *Prod.* 383. A much-branched shrub, attaining 8 or 10 ft., the young shoots silvery-pubescent, the adult foliage glabrous. Leaves mostly terete, slender but rigid, divided into 3 divaricate segments as long as the entire base or undivided, acute and usually pungent-pointed, smooth or slightly grooved, the whole leaf  $1\frac{1}{2}$  to 3 in. long; mixed with these are usually a few flat oval oblong obtuse or sometimes lanceolate and acute entire leaves  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. long. Flowers not very numerous, in sessile axillary clusters. Pedicels silky, about 2 lines long. Perianth silky-villous or hirsute, the tube straight, 3 lines long, the limb slightly recurved. Torus small. Gland very prominent, truncate, half cup-shaped. Ovary almost sessile; style not long, with a large lateral stigmatic disk. Fruit  $\frac{3}{4}$  in. long or rather less,  $\frac{1}{4}$  in. broad, slightly incurved, obtuse, smooth. Seed-wing not decurrent.—Meissn. in *Pl. Preiss.* i. 558, and in *DC. Prod.* xiv. 404; *Conchium trifurcatum*, Sm. in *Trans. Linn. Soc.* ix. 122; *H. mixta* and *H. triceruris*, Lindl. *Swan Riv. App.* 35.

**W. Australia.** King George's Sound, *H. Brown, Butler, A. Cunningham*, and others; Swan river to King George's Sound, *Drummond*, n. 102, 103, 1st coll. n. 626, *Preiss*, n. 619; Murchison river, *Oldfield*.

*H. Boucheana*, Kunth, Ind. Sem. Hort. Berol. 1844, in *Linnaea*, xviii. 499; Meissn. in DC. Prod. xiv. 404, said to have been raised from Tasmanian seeds, is nevertheless probably the Western *H. trifurcata*, the only difference relied upon being in the flat leaves described as lanceolate and pungent-pointed, but that occurs here and there in several of the King George's Sound specimens.

28. **H. erinacea**, Meissn. in *Pl. Preiss.* i. 559, and in *DC. Prod.* xiv. 404. An erect shrub of 2 or 3 ft., the branches tomentose or villous, the foliage glabrous. Leaves divided into 3 or 5 terete rigid pungent-pointed segments either entire or again bifid or trifid, usually shorter than the entire part and the whole leaf rarely much above 1 in. long. Flowers in small sessile axillary clusters. Pedicels pubescent, about 3 lines long. Perianth densely but shortly villous, the tube about 3 lines long, slightly recurved under the broadly conical limb. Torus straight. Gland very prominent, semianular. Ovary almost sessile; style rather short, with a lateral oblong-linear stigmatic disk about 1 line long. Fruit 7 to 8 lines long, 2 to 3 lines broad, smooth, falcate or abruptly curved in the middle into a beak almost as broad as the thicker base. Seed-wing not decurrent.

**W. Australia.** Swan river, *Drummond*, n. 107, 1st coll. n. 601, *Preiss*, n. 601.

Var. *longiflora*. Perianth-tube 4 lines, the limb and the stigmatic disk 2 lines long.—Swan river, *Drummond*.

29. **H. platysperma**, Hook. Ic. Pl. t. 433. Branches minutely hoary-pubescent. Leaves terete, smooth, thick, rigid, pungent-pointed, somewhat attenuate at the base, mostly erect, 3 to 5 in. long. Flowers in axillary sessile clusters. Pedicels minutely silky-pubescent, 2 to 3 lines long. Perianth minutely silky-pubescent, the tube shortly dilated at the base, much revolute, above 4 lines long, the upper segments much shorter. Torus straight. Gland broad, concave. Ovary stipitate; style long, with a long narrow lateral stigmatic disk. Fruit when perfect quite globular, fully 2 in. diameter, very hard. Seed-wing covering the whole inner face of the valves, nearly equally broad all round the nucleus, which is more muricate on the outer face than in any other species.—Meissn. in. *Pl. Preiss.* i. 555, ii. 259, and in *DC. Prod.* xiv. 394.

**W. Australia**, *Drummond*, 2nd coll. n. 329, 4th coll. n. 287, *Preiss*, n. 551; Stirling Range, Maxwell.

30. **H. brachyptera**, Meissn. in *DC. Prod.* xiv. 396. A low intricately-branched shrub, the young shoots silky, the older foliage glabrous. Leaves terete, slender, divaricate, acute, scarcely attenuate at the base, 1 to 3 in. long. Flowers very small, in sessile axillary clusters. Pedicels silky, about 1 line long. Perianth silky-pubescent, revolute under the globular limb, the shorter segments scarcely 1 line long. Torus straight. Gland semianular. Ovary nearly sessile; style not long, with a large oblique stigmatic disk. Fruit compressed, very rugose, 1 in. long and nearly as broad, with a very short lateral

beak sometimes scarcely prominent. Seed-wing decurrent along both sides round the base of the nucleus.

**W. Australia.**, Drummond, 4th coll. n. 291.

31. **H. Kippistiana**, Meissn. in Hook. *Kew Journ.* vii. 115, and in *DC. Prod.* xiv. 402. Branches virgate, nearly glabrous, but the young shoots more or less silky-pubescent. Leaves terete, slender, smooth, mucronate, attenuate at the base,  $1\frac{1}{2}$  to 3 in. long. Flowers small, in shortly pedunculate axillary clusters, but not seen fully out, the rhachis pedicels and perianths sprinkled with appressed hairs. Perianth-tube slender, reflexed under the globular limb. Gland prominent, semicupular. Ovary shortly stipitate; style (not long?) with an oblique broad stigmatic disk. Fruit  $\frac{3}{4}$  to 1 in. long, nearly  $\frac{1}{2}$  in. broad, smooth, with a broad obtuse compressed beak, the valves sometimes with a slight dorsal gibbosity near the end. Seed-wing decurrent on the upper side only.

**W. Australia**, Drummond, 5th coll. suppl. n. 14.—The fruit, like that of *H. Pamphiliana* and *H. commutata*, is shaped like that of *H. leucoptera*, with which F. Mueller, *Fragm.* vi. 219, unites *H. Kippistiana*, but the flowers are different and the fruit quite smooth.

32. **H. Preissii**, Meissn. in *Pl. Preiss.* i. 557, and in *DC. Prod.* xiv. 399. A tall shrub or tree attaining 30 ft., with very rigid branches, our specimens quite glabrous, even the young shoots. Leaves terete, smooth, very thick and rigid, pungent-pointed, in some specimens all under 1 in. in others 1 to  $1\frac{1}{2}$  in. long. Flowers in axillary clusters, the rhachis  $\frac{1}{2}$  to 1 line long, often persistent on the old branches. Pedicels silky-pubescent, 2 to 3 lines long. Perianth silky-pubescent, the tube slightly dilated towards the base, scarcely 2 lines long, much revolute upwards. Torus straight. Gland large, semicupular. Ovary very shortly stipitate; style slightly clavate under the broad lateral stigmatic disk. Fruit about  $\frac{3}{4}$  in. long, 3 or 4 lines broad, transversely truncate at the end with the horizontally conical dorsal horns of the valves, which are sometimes very prominent, sometimes obscure.

**W. Australia.** Swan river, Drummond, n. 190, 1st coll., Preiss, n. 617 b; Darling ranges, Oldfield; Jarramup, Maxwell.

In herb. F. Mueller there is a specimen in fruit, with longer leaves, apparently of this species, but with the fruit rather longer though not broader. We have also specimens in leaf only of what may be the same species, from Sharks Bay, Milne.

33. **H. pugioniformis**, Cav. *Ann. Hist. Nat.* i. 213, t. 11, *Ic.* vi. 24, *t.* 533. A shrub usually of 2 to 4 ft., but sometimes twice as tall, the branches and foliage glabrous or very minutely silky-pubescent. Leaves terete, smooth, rigid with a short pungent point, from under 1 in. to near 2 in. long. Flowers few, in axillary sessile clusters. Pedicels 1 to 2 lines long, pubescent as well as the perianth with appressed or spreading hairs. Perianth-tube slender, 2 to 3 lines long, reflexed under the ovoid limb. Torus small. Gland prominent,

semiaircular or semicircular. Ovary shortly stipitate; style long, with a nearly straight convex or very broadly conical disk. Fruit lanceolate, acuminate, about 1 in. long and  $\frac{1}{4}$  in. broad, rugose outside about the middle with an obliquely transverse prominent crest. Seed-wing scarcely decurrent on the upper side of the nucleus.—R. Br. in Trans. Linn. Soc. x. 178, Prod. 381; Meissn. in DC. Prod. xiv. 398; Hook. f. Fl. Tasm. i. 324; Lodd. Bot. Cab. t. 353; Reichb. Ic. et Deser. Pl. t. 23.—*Conchium pugioniforme*, Sm. in Trans. Linn. Soc. ix. 122; *Conchium longifolium*, Sm. Ic. 121; *Lambertia teretifolia*, Gertn. t. Fr. iii. t. 217; *Banksia teretifolia*, Salisb. Prod. 51; *Hakea glabra*, Schrad. Sert. Hann. 27. t. 17; *H. glauca* and *H. parilis*, Knight, Prot. 106.

**N. S. Wales.** Port Jackson to the Blue Mountains, *R. Brown*, *Sieber*, n. 13, and others; Hastings river, *Beckler*.

**Victoria.** Grampians, low scrubby hills towards Mount Ararat, between Melbourne and the Dandenong ranges and in Gipps' Land, *F. Mueller*.

**Tasmania.** Port Dalrymple and Derwent river, *R. Brown*; common in many parts of the island in poor soils, *J. D. Hooker*.

The Tasmanian and Victorian specimens have generally but not constantly rather larger flowers, with more spreading hairs than those from N. S. Wales.

34. **H. Pampliniana**, Kipp.; *Meissn. in DC. Prod. xiv. 395*. Young branches silky-tomentose, the adult foliage glabrous. Leaves terete, slender, finely pointed, slightly attenuate at the base,  $1\frac{1}{2}$  to 3 in. long. Flowers in axillary clusters mostly on short peduncles. Pedicels about 2 lines long. Perianth silky-pubescent, the tube slender, about 3 lines long, reflexed under the globular limb. Torus small. Gland prominent, semiaircular. Ovary shortly stipitate; style not very long, with an oblique disk scarcely umbonate in the centre. Fruit 1 in. long, nearly  $\frac{1}{4}$  in. broad, with a short broad straight beak, shaped like the fruit of *H. tenuicarpa* but smooth, the valves thickened at the end but scarcely horned. Seed-wing shortly decurrent on the upper margin of the nucleus.

**Queensland?** Curriwilliglie, *Dalton* (the specimen incomplete).

**N. S. Wales.** Castlereagh river, *Woolls*.

**Victoria?** Murray desert, *Herb. F. Mueller*.

**S. Australia.** Spencer's Gulf, *Herb. F. Mueller*; Streaky Bay, *Babbage*; Encounter Bay, *Whittaker*; Tatiara Country, *Woods*.

35? **H. vittata**, *R. Br. in Trans. Linn. Soc. x. 182, Prod. 383*. Young shoots minutely ferruginous or hoary, the adult foliage glabrous. Leaves terete, slender, rigid, finely almost pungent-pointed, not attenuate at the base,  $1\frac{1}{2}$  to 3 in. long. Flowers not seen except some loose remains which appear to have been like those of *H. Pampliniana*, the perianth silky-pubescent, the torus small, the style rather long with an orbicular lateral stigmatic disk. Fruit ovoid, nearly  $\frac{3}{4}$  in. long, fully 4 lines broad, spotted or slightly verrucose, scarcely beaked, marked with a broad smooth dark line down each suture, the valves with a short dorsal horn near the end. Seed-wing decurrent along the upper margin only of the nucleus.—Meissn. in DC. Prod. xiv. 401.

**S. Australia.** Port Lincoln, *R. Brown*. The foliage is that of *H. Pampliniana*,

and if the fragments of flowers above mentioned really belong to the specimens, it is possible that some of the flowering specimens referred to *H. Pampliniana* may belong rather to *H. vittata*. The fruits of the two as far as known are very different.

**36. *H. rostrata*, F. Muell.**; *Meissn.* in *Linnæa* xxvi. 259, and in *DC. Prod.* xiv. 396. An erect shrub of several feet, glabrous except the inflorescence. Leaves terete, smooth, rigid, mucronate,  $1\frac{1}{2}$  to 4 in. long. Flowers in sessile axillary clusters. Perianth silky-pubescent, the tube about 3 lines long, much revolute under the globular limb. Torus small. Gland usually crenate or shortly 2- or 3-lobed. Ovary shortly stipitate; style not very long, the stigmatic disk with a prominent cone as in *H. rugosa*. Fruit recurved at the base, incurved from the middle, with a closely inflexed conical beak of 3 or 4 lines, the whole fruit 1 to  $1\frac{1}{2}$  in. long and nearly  $\frac{3}{4}$  in. broad, more or less rugose but not cristate.

**Victoria.** Grampians, Mitchell; Mount Sturgeon, Robertson; Glenelg river and Mount Abrupt, F. Mueller.

**S. Australia.** Lofty range and Kangaroo Island, F. Mueller; St. Vincent's Gulf, Blandowski.

**37. *H. rugosa*, R. Br.** in *Trans. Linn. Soc.* x. 179, *Prod.* 381. A spreading or prostrate shrub, glabrous except the inflorescence or the young shoots minutely silky. Leaves terete, divaricate, smooth, rigid, pungent-pointed,  $\frac{3}{4}$  to  $1\frac{1}{2}$  or rarely 2 in. long. Flowers small, in axillary clusters. Pedicels silky-pubescent, short. Perianth silky-pubescent, the tube about 2 lines long, recurved under the limb. Torus straight. Gland semiannular, truncate or crenate. Ovary shortly stipitate; style not very long; stigmatic disk oblique, with a prominent cone. Fruit about  $\frac{3}{4}$  in. long, under  $\frac{1}{2}$  in. broad, recurved at the base, incurved above the middle, very rugose or cristate, with an inflexed conical beak. Seed-wing not decurrent.—Meissn. in DC. Prod. xiv. 397.

**Victoria.** Macalister river, towards its source, F. Mueller; Glenelg river, Robertson.

**S. Australia.** Port Lincoln, R. Brown; Murray river, Lofty range, F. Mueller; Bethanie, Oswald; Kangaroo Island, Waterhouse.

The cone on the stigmatic disk of this species and of *H. rostrata*, and in a less degree on that of *H. fugioniformis*, connects them with the section *Conegnoides*, but the pubescent flowers and general affinity with *H. epiglottis* place them rather in *Euhakea*.

**38. *H. epiglottis*, Labill.** *Pl. Nov. Holl.* i. 30, t. 40. An erect shrub attaining 7 or 8 ft., glabrous except the inflorescence and the silky-pubescent young shoots. Leaves terete, smooth, rigid, mucronate,  $1\frac{1}{2}$  to 3 in. long. Flowers small, in axillary clusters. Perianth silky-pubescent, the tube near 2 lines long, recurved under the limb. Torus straight. Gland semiannular. Ovary shortly stipitate; style not very long; stigmatic disk oblique, without the prominent cone of *H. rugosa*. Fruit 7 to 9 lines long, 3 to 4 lines broad, rugose but not cristate, recurved at the base, incurved above the middle, with a short conical incurved beak. Seed-wing not decurrent. R. Br. in *Trans. Linn. Soc.* x. 179, *Prod.* 382; Meissn. in DC. Prod. xiv. 395; Hook. f. *Pl. Tasm.* i. 324; *Conchiam*



Hauspostkarte





*epiglottis*, Willd. Enum. Hort. Berol. 141; *Conchium teretifolium*, Gærtn. f. Fr. iii. 217, t. 219; *Hakea Milligani*, Meissn. in DC. Prod. xiv. 395.

**Tasmania.** Port Dalrymple and Derwent river, *R. Brown*; common in various parts of the island, ascending to 3000 feet, *J. D. Hooker*.

SERIES 2. GLABRIFLORÆ.—Perianth glabrous. Torus straight or slightly oblique, the gland semiannular or none.

39. **H. amplexicaulis**, *R. Br.* in *Trans. Linn. Soc.* x. 184, *Prod.* 384. An erect shrub attaining 10 to 12 ft., our specimens glabrous. Leaves sessile, ovate-oblong or lanceolate, undulate sinuate and prickly-toothed, deeply cordate and clasping the stem with rounded prickly-toothed auricles, the whole leaf 3 to 8 in. long, rigid, more or less glaucous, peninniveined but the veins scarcely prominent. Flowers white, numerous, in short axillary pedunculate clusters or racemes, the peduncles 1 to 2 lines long and glabrous, the rhachis about as long and villous. Pedicels glabrous, filiform, 4 to 6 lines long. Perianth glabrous, the tube about 3 lines long, much revolute under the globular limb. Torus somewhat oblique. Gland very prominent, semicircular. Ovary shortly stipitate; style long, clavate under the oblique convex disk. Fruit about 1 in. long and  $\frac{1}{2}$  in. broad or rather larger, smooth or slightly muricate, shortly acuminatae. Seed-wing shortly decurrent, especially on the upper margin of the nucleus.—Meissn. in Pl. Preiss. i. 565, and in DC. Prod. xiv. 407; *H. triformis*, Lindl. Swan Riv. App. 36.

**W. Australia.** King George's Sound, *R. Brown*, *Oldfield*, *F. Mueller*; and thence towards Swan river, *Drummond*, 1st coll. n. 610, *Preiss*, n. 548.

40. **H. glabella**, *R. Br.* *Prot. Nov.* 28. An erect spreading or diffuse shrub described sometimes as growing into a small tree of 12 to 15 ft., sometimes as low and prostrate, quite glabrous or the branches more or less villous. Leaves sessile, obovate to oblong-cuneate, entire or more frequently sinuate and prickly-toothed, usually contracted below the middle, dilated at the base, deeply cordate and embracing the stem with rounded and entire or angular and prickly-toothed auricles, the whole leaf 1 $\frac{1}{2}$  to 3 in. long. Flowers rather smaller than in *H. amplexicaulis*, in axillary clusters or short racemes, the rhachis 1 to 3 lines long and quite glabrous as well as the pedicels and perianths. Pedicels 2 to 4 lines long. Perianth-tube 2 to 2 $\frac{1}{2}$  lines long, reflexed under the limb. Torus nearly straight. Gland prominent, semiannular. Ovary shortly stipitate; style long, with an oblique stigmatic disk. Fruit 1 to 1 $\frac{1}{4}$  in. long, 6 to 7 lines broad, smooth or sparingly muricate, with a broad, obtuse slightly incurved beak. Seed-wing decurrent along the upper margin of the nucleus.—Meissn. in Pl. Preiss. i. 564, and in DC. Prod. xiv. 407; *H. denticulata*, *R. Br.* *Prot. Nov.* 28; *H. prostrata*, *R. Br.* in *Trans. Linn. Soc.* x. 184, *Prod.* 384; Meissn. in Pl. Preiss. i. 565, and in DC. Prod. xiv. 407.

**W. Australia.** King George's Sound and adjoining districts, *R. Brown*, *Baxter*, *Drummond*, 3rd coll. n. 278, *Preiss*, n. 539, 542, and others; Swan river, *Fraser*, *Drummond*, 1st coll. n. 612, *Preiss*, n. 538; Murchison river, *Oldfield*.

*H. glabella* and *H. prostrata* are usually distinguished by the former being a tall glabrous Swan river shrub, and the latter prostrate with villous stems from King George's Sound, but some of Oldfield's specimens with villous branches are described as attaining 12 to 15 ft., and some of F. Mueller's glabrous ones from Stirling Range as 10 to 12 ft. high, whilst some of Drummond's glabrous Swan river ones are evidently as prostrate as Brown's typical *H. prostrata*. The foliage is equally variable in all, and the flowers and fruits the same as far as known.

41. ***H. auriculata***, Meissn. in *Hook. Kew Journ.* vii. 116, and in *DC. Prod.* xiv. 406. An erect shrub of 2 ft. or more, glabrous or the branches pubescent. Leaves usually cuneate, broad and truncate or sinuate and prickly-toothed at the end, tapering into a long narrow lower portion, sessile, and again dilated at the base into stem-clasping auricles more or less angular or prickly-toothed, but sometimes the upper end divided into 3 narrow pungent-pointed lobes or the whole leaf from a broad stem-clasping base linear-lanceolate pungent-pointed and entire or with a pair of divaricate lobes, the leaf varying from  $1\frac{1}{2}$  to near 3 in. long. Flowers in axillary clusters. Pedicels 2 or 3 lines long, glabrous as well as the rhachis. Perianth glabrous, the tube about 2 lines long, reflexed under the globular limb. Torus nearly straight. Gland small, semiannular. Ovary nearly sessile; style rather long, thickened under the oblique convex stigmatic disk. Fruit about  $\frac{3}{4}$  in. long and  $\frac{1}{2}$  in. broad, muricate with long prickles, the valves with a thick dorsal horn near the end. Seed-wing surrounding the nucleus and occupying nearly the whole breadth of the valves.

**W. Australia.** Murchison river, Oldfield, Drummond, 6th coll. n. 197.

Var. *spathulata*. Leaves with the long winged base half stem-clasping, but scarcely dilated in the majority of leaves, although here and there showing small prickly-toothed auricles.—*H. attenuata*, Meissn. in DC. Prod. xiv. 406, as to Drummond's specimens, not of R. Brown.—Swan river, Drummond, 1st coll. n. 615.

Some of the forms of *H. varia* have the foliage almost of some forms of *H. auriculata*, but the flowers and fruits are very different.

42. ***H. cristata***, R. Br. *Prot. Nov.* 28. An erect shrub, attaining 6 to 8 ft., our specimens quite glabrous. Leaves from broadly obovate to oblong, sinuate and prickly-toothed, tapering into a short petiole,  $1\frac{1}{2}$  to 3 in. long, rigid, glaucous, obscurely penniveined. Flowers small, in short axillary racemes, the villous rhachis 2 to 4 lines long. Pedicels filiform, glabrous, 2 to 3 lines long. Perianth glabrous, the tube about  $1\frac{1}{2}$  lines long, revolute under the globular limb. Torus slightly oblique. Gland small but prominent, erect, obovate, truncate. Ovary shortly stipitate; stigmatic disk broad, oblique, slightly convex. Fruit about  $1\frac{1}{2}$  in. long and 1 in. broad, with a broad slightly incurved beak; each valve bearing usually next the sutures an irregular longitudinal rigid toothed wing or crest sometimes decurrent along both sutures nearly to the base, sometimes along the upper suture only or almost obsolete. Seed-wing narrowly decurrent down both margins of the nucleus, which is less lacunose on the outer face than in most species.—Meissn. in Pl. Preiss. i. 564, and in DC. Prod. xiv. 406; Hook. Ic. Pl. t. 443.

**W. Australia.** Swan river, Fraser, Drummond, 1st coll. n. 614, Preiss, n. 546.

43. **H. linearis**, R. Br. in *Trans. Linn. Soc.* x. 183, Prod. 384. An erect bushy bright green glabrous shrub. Leaves sessile, linear-lanceolate, pungent-pointed, entire or bordered by a few small prickly teeth, 1 to  $1\frac{1}{2}$  or rarely 2 in. long, thick and rigid, veinless except the scarcely prominent midrib. Flowers small, in axillary clusters or short racemes, the rhachis 1 to 2 lines long, quite glabrous. Perianth glabrous, white, the tube slender,  $2\frac{1}{2}$  to 3 lines long, revolute under the globular limb. Torus small. Gland small but prominent, truncate or 2-lobed. Ovary stipitate; style not very long, with an oblique orbicular stigmatic disk. Fruit (not seen attached) 1 in. long, about  $\frac{1}{4}$  in. broad, on a recurved stipe, slightly incurved, smooth, with a short conical beak, the valves with conical dorsal protuberances or short horns near the end. Seed-wing shortly decurrent on the upper margin only of the nucleus.—Meissn. in Pl. Preiss. i. 562, and in DC. Prod. xiv. 405; Sweet. Fl. Austral. t. 43; Bot. Reg. t. 1489.

**W. Australia.** King George's Sound, R. Brown, Fraser, Milne, Maxwell, Drummond, 2nd coll. n. 335; Canning river, Oldfield.

44. ? **H. stenocarpoides**, F. Muell. Herb. Apparently tall and quite glabrous. Leaves oblong-cuneate, obtuse, tapering to the base, entire, 3 to 4 in. long, thick, obscurely triplinerved with the addition sometimes of a few very oblique veins. Flowers about 6 or 8 together, umbellate on a common axillary peduncle of about  $\frac{1}{2}$  in., the pedicels scarcely  $\frac{1}{4}$  in. long, all as well as the flowers quite glabrous. Perianth about  $\frac{1}{2}$  in. long, with a short broad oblique almost gibbosus base, then narrow, revolute under the globular limb. Torus small, without any gland. Ovary on a stipe of nearly 3 lines much thickened at the base; style scarcely 2 lines long, with a large orbicular lateral stigmatic disk. Fruit unknown.

**W. Australia,** Drummond (5th coll.?) suppl. n. 15. The inflorescence is quite anomalous, and the genus must remain uncertain until the fruit shall have been observed. There are certainly only 2 ovules in the ovary, collaterally attached, and the plant has much more the aspect of a *Hakea* than of a *Grevillea*.

45. **H. ruscifolia**, Labill. Pl. Nor. Holl. i. 30, t. 39. An erect bushy shrub of 6 to 8 ft., the branches and young shoots hirsute with long fine spreading hairs, intermingled with a fulvous tomentum. Leaves on long petioles when small, the larger ones almost sessile, ovate oblong or lanceolate, pungent-pointed, all under  $\frac{1}{2}$  in. in some specimens, in others narrower and near 1 in. long, veinless and scabrous-pubescent or glabrous above, tomentose or at length nearly glabrous underneath with the midrib prominent. Flowers small, white, in dense clusters terminating short leafy branches. Pedicels glabrous, filiform, 2 to 4 lines long. Perianth glabrous, the tube about  $1\frac{1}{2}$  lines long, reflexed under the limb. Torus small. Gland prominent, semiannular. Ovary nearly sessile; style short, the stigmatic disk broad, slightly convex. Fruit  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long,  $\frac{1}{4}$  in. broad, scarcely beaked. Seed-wing decurrent only on the upper margin of the nucleus.—R. Br. in *Trans.*

Linn. Soc. x. 186, Prod. 385; Meissn. in Pl. Preiss. i. 576, and in DC. Prod. xiv. 419; *Conchium ruscifolium*, Willd. Enum. Hort. Berol. 141.

**W. Australia.** King George's Sound and adjoining districts, *Labillardière*, R. Brown, and many others, and thence to Swan river, *Fraser*, *Drummond*, 1st coll., 3rd coll. n. 276, *Preiss.* n. 611, and others. This species also stands alone without any immediate affinity with any other.

46. **H. saligna**, *Knight*, *Prot.* 108. A tall bushy shrub, quite glabrous or the young shoots slightly silky. Leaves usually lanceolate, obtuse or with a short callous point, tapering into a short petiole, 3 to 6 in. long, but sometimes oblong-elliptical and 2 to 4 in. long, of a pale colour, veinless or obscurely and obliquely pinniveined. Flowers small, in dense axillary clusters, the very short rhachis hirsute. Pedicels glabrous, filiform, about 3 lines long. Perianth glabrous, the tube scarcely 2 lines long, much revolute under the globular limb. Torus small. Gland small. Ovary nearly sessile; style long, with a large lateral convex stigmatic disk. Fruit about 1 in. long,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. broad, with a short incurved beak, more or less rugose and sometimes covered with large very prominent tubercles. Seed-wing shortly decurrent along the upper margin of the nucleus.—R. Br. in *Trans. Linn. Soc.* x. 185, Prod. 385; Meissn. in DC. Prod. xiv. 416; Sweet, *Fl. Austral.* t. 27; *Embothrium salignum*, Andr. Bot. Rep. t. 215; *Conchium salignum*, Sm. in *Trans. Linn. Soc.* ix. 124; *Embothrium salicifolium*, Vent. Jard. Cels. t. 8; *Conchium salicifolium*, Gaertn. f. Fr. iii. 217; *Hakea mimosoides* A. Cunn.; Meissn. in DC. Prod. xiv. 416; *H. florulenta*, Meissn. in Hook. *Kew Journ.* vii. 116, and in DC. Prod. xiv. 416.

**Queensland.** Arancaria ranges, Leichhardt; Brisbane river, Moreton Bay, A. Cunningham, F. Mueller.

**N. S. Wales.** Port Jackson to the Blue Mountains, R. Brown, and many others; Argyle County, *Fraser*; New England, C. Stuart.

The Queensland specimens, to which the name of *H. mimosoides* specially applies, have longer leaves than most of the N. S. Wales ones, and F. Mueller's have the fruits narrower and less tuberculate, but several N. S. Wales ones have the same long leaves, with the fruits unknown. Some of C. Stuart's New England specimens have the leaves shorter and broader than usual. It will require, however, much more complete specimens to establish any definite varieties.

47. **H. verrucosa**, F. Muell. *Fragm.* v. 25, vi. 218. A handsome shrub of several ft., the branches closely pubescent. Leaves terete, smooth, rigid, mucronate,  $1\frac{1}{2}$  to 3 in. long. Flowers red, in short racemes, mostly terminating short leafy branches, the pubescent or villous rhachis 2 to 4 lines long. Pedicels glabrous, slender, 1 to 2 lines long. Perianth glabrous, the tube 4 to 5 lines long, narrow, opening on the lower side only, revolute under the ovoid-globular limb. Torus rather oblique. Gland broad, semicircular, scarcely prominent. Ovary very shortly stipitate; style long, with an oblique almost lateral stigmatic disk. Fruit above 1 in. long, about  $\frac{1}{2}$  in. broad, recurved at the base, the valves with a conical dorsal protuberance near the end. Seed-wing decurrent about half way down the upper margin of the nucleus.





**W. or E. Australia?** A very distinct species, although allied to *H. purpurea*, cultivated in the Melbourne Botanic Garden as West Australian, but suspected by F. Mueller to be of eastern origin.

48. **H. purpurea**, Hook. in *Mitch. Trop. Austr.* 348. A hard rigid bushy shrub of several ft., glabrous except a few silky hairs on the very young shoots. Leaves terete, smooth, once or twice bifid or trifid, rigid and pungent-pointed, the whole leaf usually  $1\frac{1}{2}$  to 2 in. long, the divided portion about as long as the simple base. Flowers "crimson," in sessile or shortly pedunculate axillary umbels. Pedicels glabrous, filiform, 3 or 4 lines long. Perianth glabrous, the tube about 5 lines long, dilated below the middle, open early along the under side, attenuate and revolute under the limb. Torus straight, rather broad. Gland scarcely prominent. Ovary shortly stipitate; style long, with an oblique almost lateral stigmatic disk. Fruit  $1\frac{1}{4}$  to  $1\frac{1}{2}$  in. long,  $\frac{3}{4}$  in. broad, nearly straight, scarcely beaked. Seed-wing very broad, decurrent down both margins and round the base of the nucleus.—Meissn. in *Linnaea* xxvi. 358, and in DC. Prod. xiv. 404; *Grevillea trisecta*, F. Muell. First Gen. Rep. 17 (name only).

**N. S. Wales.** Warrego river, Mitchell; Darling Desert, Nielson (specimens in leaf only).

**Victoria.** N.W. interior of the Colony, F. Mueller (the specimens seen all cultivated).

49. **H. gibbosa**, Cav. *Anal. Hist. Nat.* i. 215, *Ic.* vi. 24, *t.* 534. A shrub of several ft., the branches and young leaves hirsute with spreading hairs, the older foliage sometimes glabrous. Leaves terete, entire, smooth, rigid, pungent-pointed, 1 to 3 in. long. Flowers in sessile axillary clusters. Pedicels short, densely villous. Perianth glabrous, the tube about 3 lines long, revolute under the globular limb. Ovary contracted into a very short stipes; style not long, with an oblique stigmatic disk. Fruit ovoid-globular, oblique, about 1 in. diameter, rugose, with a very short thick obtuse oblique or incurved beak, the valves with small dorsal horns near the end. Seed-wing narrowly decurrent down both margins of the nucleus.—R. Br. in *Trans. Linn. Soc.* x. 181, Prod. 382; Meissn. in DC. Prod. xiv. 401; *Banksia gibbosa*, Sm. in *White Voy.* 224, *t.* 22, *f.* 2; *Conchium gibbosum* Sm. in *Trans. Linn. Soc.* ix. 119; *Conchium sphæroideum*, Sm. *l.c.* 120; *Conchium cornutum*, Gaertn. *f.* Fr. iii. 216, *t.* 219; *Hakea pubescens*, Schrad. *Sert. Hannov.* 27; *Conchium pubescens*. Willd. *Enum. Hort. Berol.* 141; *H. pinifolia*, Salisb. Prod. 51; *H. lanigera*, Ten. *Fl. Nap.* i. 22, *t.* 6.

**N. S. Wales.** Port Jackson, R. Brown, Sieber, *n.* 14, and others.

50. **H. propinqua**, A. Cunn. in *Field*, N. S. Wales, 327. A bushy shrub, the adult foliage glabrous, the branches scarcely pubescent. Leaves crowded, terete, smooth, mucronate, rather thick, shortly attenuate at the base, mostly 1 to  $1\frac{1}{2}$  in. long. Flowers very small, in little axillary clusters. Pedicels hirsute, scarcely 1 line long. Perianth glabrous, revolute, about 1 line long. Torus straight. Gland small.

Ovary nearly sessile; style not long, with a large oblique stigmatic disk. Fruit above 1 in. long and nearly as broad, very rugose, with large prominent obtuse tubercles, straight, scarcely beaked. Seed-wing decurrent along the upper margin of the nucleus.—Meissn. in DC. Prod. xiv. 397; *H. pachyphylla*, Sieb. in Spreng. Syst. Cur. Post. 46, and in Roem. and Schult. Syst. iii. Mant. 282; R. Br. Prot. Nov. 26.

**N. S. Wales.** Blue Mountains, *A. Cunningham*, Sieber, n. 11; *Backhouse*.

51. ***H. nodosa***, R. Br. in *Trans. Linn. Soc.* x. 179, *Prod.* 382. A shrub of 2 to 6 ft., quite glabrous or the young shoots minutely silky-pubescent, the branches rather slender. Leaves rather crowded, terete and slender or rather broader and slightly compressed, mucronate, smooth, slightly attenuate at the base, 1 to  $1\frac{1}{2}$  or rarely 2 in. long. Flowers minute, in axillary clusters. Pedicels scarcely 1 line long, slightly silky. Perianth glabrous, scarcely 1 line long, revolute under the limb. Torus straight or nearly so. Gland prominent, erect, semi-annular. Ovary very shortly stipitate; style not long, with a large very oblique stigmatic disk. Fruit  $\frac{3}{4}$  to near 1 in. long,  $\frac{1}{2}$  in. broad, either verrucose with a broad obtuse smooth but otherwise scarcely distinct beak, or the whole fruit smooth. Seed-wing decurrent down the upper margin to below the nucleus.—Meissn. in DC. Prod. xiv. 397 as to Brown's plant only; *H. flexilis*, R. Br. in *Trans. Linn. Soc.* x. 180, *Prod.* 382; Meissn. l.c. 396, also as to Brown's plant only; *H. semiplana*, F. Muell.; Meissn. in *Linnæa* xxvi. 359, and in DC. Prod. xiv. 397.

**Victoria.** Port Phillip, R. Brown, Adamson; heaths near Bridgewater Bay and Portland, Robertson; marshy pastures from Dandenong Creek to Gipps' Land, F. Mueller; Grampians? Mitchell.

52. ***H. acicularis***, R. Br. in *Trans. Linn. Soc.* x. 181, *Prod.* 383. A tall shrub or small bushy tree, glabrous except the inflorescence, or the young branches silky and the foliage rarely minutely pubescent. Leaves terete, smooth, rigid, pungent-pointed, 1 to 2 or rarely near 3 in. long, not attenuate at the base. Flowers in sessile axillary clusters. Pedicels silky-pubescent, 1 to 2 lines long. Perianth glabrous, the tube about 2 lines long in the typical form, revolute under the limb. Torus straight. Gland prominent, semi-annular. Ovary contracted into a very short stipe; style not long, with an oblique stigmatic disk. Fruit usually about 1 in. long and  $\frac{1}{2}$  to  $\frac{3}{4}$  in. broad, very thick and rugose, with a short obtuse smooth and straight beak. Seed-wing decurrent along the upper margin only of the nucleus.—Meissn. in DC. Prod. xiv. 400; Endl. Iconogr. t. 24; Reichb. Ic. et Descr. Pl. t. 24; *Conchium aciculare*, Vent. Jard. Malm. t. 111; Sm. in *Trans. Linn. Soc.* ix. 121; *Hakea sericea*, Schrad. Sert. Hannov. 27; *Conchium compressum*, Sm. in *Trans. Linn. Soc.* ix. 121; *Banksia tenuifolia*, Salish. *Prod.* 50 (Sm.); *H. decurrens*, R. Br. *Prot.* Nov. 27; Meissn. in DC. *Prod.* xiv. 401.

**N. S. Wales.** Port Jackson to the Blue Mountains, R. Brown, Sieber, n. 10, and Fl. Mirt. n. 481, and many others; Liverpool Plains, *A. Cunningham*; Twofold Bay, F. Mueller.

Var. *lissosperma*. Leaves usually more rigid and stouter, sometimes 3 to 4 in. long, but sometimes like those of the typical form. Perianth about 3 lines long. Fruit broader, scarcely beaked. Nucleus of the seed less rugose but rarely quite smooth on the outer face. All these characters, however, occur occasionally in N. S. Wales specimens, or are scarcely marked in southern ones.—*H. lissosperma*, R. Br., in Trans. Linn. Soc. x. 180, Prod. 382; Meissn. in DC. Prod. xiv. 401; *H. acicularis* and *H. lissosperma*, Hook. f. Fl. Tasm. i. 325; *H. brachyrrhyncha*, F. Muell., First Gen. Rep. 17 (name only); *H. obliqua*, Lodd. Bot. Cab. t. 1682? not of R. Br.

**Victoria.** Wilson's Promontory, Macalister river, and ranges near Stieglitz, F. Mueller.

**Tasmania.** Derwent river, R. Brown; Cape Barren and Flinders Islands, Bass's Straits, Gunn, Milligan; common in subalpine stations from 2000 to 4000 ft. elevation, J. D. Hooker.

53. ***H. leucoptera***, R. Br. in *Trans. Linn. Soc.* x. 180, *Prod.* 382. A shrub with rather slender virgate branches, minutely hoary-pubescent. Leaves terete, smooth, mucronate with fine straight rigid points, more or less attenuate at the base, 1½ to 3 in. long. Flowers small, in short racemes or clusters pedunculate in the axils or rarely terminating short leafy branches, the peduncle and rhachis minutely silky-pubescent, ½ to ¾ in. long. Pedicels glabrous, 2 to 2½ lines long. Perianth glabrous, the tube about 2½ lines long, slightly dilated below the middle, revolute under the limb. Torus slightly oblique. Gland semianular. Ovary stipitate; style not long, with a very oblique almost lateral stigmatic disk. Fruit about 1 in. long, ½ to ¾ in. broad, often somewhat verrucose, with a short conical beak, the valves without any or with scarcely prominent dorsal protuberances at the end. Seed-wing usually more or less decurrent along the upper margin only of the nucleus.—Meissn. in DC. Prod. xiv. 396; F. Muell. Fragm. vi. 219 (but not all the synonyms adduced); *H. leucocephala*, Dietr. Syn. Pl. i. 531 (by a misprint); *H. virgata* R. Br. Prot. Nov. 26; Meissn. in DC. Prod. xiv. 395; *H. tephrosperma*, R. Br. l.c.; Meissn. l.c. 402; *H. longicuspis*, Hook. in Mitch. Trop. Austr. 397; Meissn. l.c. 395; *H. stricta*, F. Muell.; Meissn. in *Linnæa* xxvi. 360 and l.c. 400.

**Queensland.** Armadilla, Barton.

**N. S. Wales.** Field's and Harrington's Plains, Lachlan river, A. Cunningham, Fraser; Plains near the Gwydir, Mitchell; Lachlan and Darling rivers to the Barrier range, Victorian and other Expeditions; Mount Murchison, Bonney.

**Victoria.** Murray Desert, F. Mueller; N.W. districts, L. Morton.

**S. Australia.** Head of Spencer's Gulf, R. Brown; Cooper's Creek, Murray.

In some specimens of Fraser's the fruit appears much narrower, but is evidently not fully ripe.

54. ***H. cycloptera***, R. Br. in *Trans. Linn. Soc.* x. 182, *Prod.* 383. Branches virgate, quite glabrous. Leaves terete, smooth, rigid, pungent-pointed, not contracted at the base, 3 to 5 in. long. Flowers in sessile axillary clusters, the whole inflorescence quite glabrous. Pedicels 1 to 2 lines long. Perianth glabrous, the tube not 2 lines long, revolute under the limb. Torus straight. Gland small. Ovary on a rather long stipe; style not long, with an oblique stigmatic disk. Fruit nearly 1½ in. long and above 1 in. broad, rugose, obtuse, the valves with dorsal horns near the end. Seed-wing broad, decurrent along

both margins and round the base of the nucleus.—Meissn. in DC. Prod. xiv. 402.

**S. Australia.** Port Lincoln, *R. Brown*, *Wilhelmi*; the former specimens in fruit only, the latter in flower with detached fruits.

55. **H. microcarpa**, *R. Br.* in *Trans. Linn. Soc.* x. 182, *Prod.* 383. A shrub varying from 2 or 3 ft. to twice that height, quite glabrous or with a very minute pubescence on the young branches and foliage. Leaves mostly terete and smooth, slender or thick, from 1 in. in some specimens to 4 in. long in others, but sometimes the lower ones or in other specimens nearly or quite all more or less compressed or channelled above, or quite flat and linear-lanceolate with the midrib and margins prominent underneath. Flowers in axillary clusters. Perianth glabrous as well as the pedicels, the tube usually about 2 lines long but variable in size, revolute under the limb. Torus straight. Gland semiannular. Ovary shortly stipitate; style not long, with a broad somewhat oblique stigmatic disk. Fruit  $\frac{1}{2}$  to nearly  $\frac{3}{4}$  in. long, about  $\frac{1}{4}$  in. broad, oblique, smooth or slightly rugose, the valves with short dorsal horns near the end sometimes reduced to small protuberances or almost obsolete.—Meissn. in DC. Prod. xiv. 400; Hook. f. Fl. Tasm. i. 324; Bot. Reg. t. 475; Lodd. Bot. Cab. t. 219; *H. patula*, *R. Br.* Prot. Nov. 27; Meissn. l.c. 401; *H. bifrons*, Meissn. l.c. 400.

**N. S. Wales.** Macquarie river, *A. Cunningham*; near Bathurst, *Fraser*; Berima, *Woolss*; New England, *C. Stuart*; Clarence river, *Beckler*.

**Victoria.** Elephant plains, *Robertson*, *F. Mueller*; Ovens, King and Upper Gippsland rivers, ascending the Australian Alps to 5000 or 6000 ft., *F. Mueller*.

**Tasmania.** Port Dalrymple, *R. Brown*; common especially on gravelly banks of rivers, ascending to 3000 ft., *J. D. Hooker*.

The flat or channelled leaves, very rare in Tasmanian specimens, are common in many of the N.S. Wales and Victorian ones, and sometimes to the exclusion of the terete leaves. It is probable therefore that *H. Mitchellii*, Meissn in DC. Prod. xiv. 398, of which I have seen no authentic specimen, should be included in *H. microcarpa*.

56. **H. recurva**, Meissn. in DC. Prod. xiv. 394. A very stout rigid shrub, the branches and foliage glabrous. Leaves terete, smooth, very thick and rigid, pungent-pointed, very spreading or recurved, 3 or 4 in. long. Flowers numerous in sessile axillary clusters or dense racemes, with a villous rhachis of 1 to 2 lines. Pedicels glabrous, filiform, 4 or 5 lines long. Perianth glabrous, the tube about 3 lines long, slightly dilated below the middle, much revolute upwards. Torus straight. Gland very prominent, semicupular. Ovary contracted into a very short stipe; style not very long, with an oblique convex stigmatic disk.

**W. Australia.** Drummond, 4th coll. n. 288, 6th coll. n. 160; Murchison river, Oldfield.

57. **H. circumalata**, Meissn. in Hook. *Kew Journ.* vii. 114, and in DC. Prod. xiv. 402. A bushy shrub, the young branches tomentose. Leaves terete, smooth, rigid, rather thick, pungent-pointed,  $\frac{3}{4}$  to above 1 in. long, rarely contracted at the base, at first pubescent, at length

nearly glabrous. Flowers in terminal sessile clusters. Pedicels 1 to 2 lines long, sparingly pubescent. Perianth glabrous, the tube about 2 lines long, much revolute above the middle, the upper segments much shorter. Torus small. Gland semiannular, not very prominent. Ovary contracted into a thick stipes; style rather long, with a broad oblique stigmatic disk. Fruit about  $\frac{3}{4}$  in. long,  $\frac{1}{2}$  in. broad, very rugose or nearly smooth, very shortly beaked, the valves with short or long dorsal protuberances or horns near the end. Seed-wing decurrent along both margins round the base of the nucleus.

**W. Australia,** Drummond, 4th coll. n. 290, 6th coll. n. 192; Murchison river, Oldfield.

58. **H. commutata**, F. Muell. *Fragn.* v. 26. Glabrous in every part even the young shoots and rhachis of the inflorescence. Leaves terete, thick, smooth, mucronate, attenuate at the base,  $\frac{1}{2}$  to 1 in. long on the flowering branches, sometimes twice as long on the main stems. Flowers in shortly pedunculate clusters, terminal or lateral on the old wood, the rhachis and peduncle together 1 to 3 lines, the pedicels 2 to 3 lines long. Perianth about 3 lines long, much revolute, the upper segments short. Torus straight. Gland small. Ovary almost sessile; style rather long, slightly thickened under the very oblique almost lateral stigmatic disk. Fruit (if correctly matched)  $\frac{3}{4}$  in. long, about 5 lines broad, smooth, with a short broad very obtuse beak, straight or slightly incurved. Seed-wing decurrent on the upper margin only of the nucleus.—*H. nodosa*, Meissn. in Pl. Preiss. i. 555, and in DC. Prod. xiv. 397 as to the western specimens, not of R. Br.

**W. Australia,** Drummond, 5th coll. n. 412 (in flower), n. 41, and 5th coll. suppl. n. 13 (in fruit).

59. **H. strumosa**, Meissn. in DC. Prod. xiv. 402. A shrub of 2 to 6 ft., quite glabrous even the inflorescence. Leaves terete, smooth, rigid, mucronate, scarcely contracted at the base,  $1\frac{1}{2}$  to 3 in. long. Flowers in sessile axillary clusters. Pedicels 2 to 3 lines long. Perianth glabrous, the tube about 2 lines long, revolute under the globular limb. Torus small. Gland very prominent, erect, oblong. Ovary nearly sessile; style rather long, with an oblique stigmatic disk. Fruit  $1\frac{1}{2}$  to 2 in. long, 1 to  $1\frac{1}{2}$  in. broad, very thick and gibbous, with a very small lateral beak often almost obsolete. Seed-wing very broadly decurrent along both margins round the base of the nucleus.

**W. Australia,** Drummond, 4th coll. n. 289; poor ridges from Mount Bland to Esperance Bay, Maxwell.

SECT. 3. CONOGYNOIDES.—Racemes usually short or reduced to sessile clusters, rarely elongated, enclosed before their development in an involucel or bud of imbricate scales. Perianth glabrous, recurved or revolute under the limb. Stigmatic cone erect or scarcely oblique.

The flowers are difficult to distinguish from those of the section *Conogyne* of *Grevillea*, but the inflorescence and fruits are those of *Hakea*.

SERIES 1. LONGISTYLE.—Leaves flat, entire, oblong-lanceolate or narrow. Style at least twice as long as the perianth. Stigmatic cone long and narrow.

60. **H. multilineata**, Meissn. in *Pl. Preiss.* ii. 261, and in *DC. Prod.* xiv. 410. A tree or tall shrub. Leaves linear-lanceolate to oblong-cuneate, very obtuse, tapering towards the base, 6 to 8 in. long when narrow, 3 to 5 in. when broad, flat, thick, minutely pubescent, striate with numerous parallel not prominent nerves. Racemes axillary, sessile, very dense and spike-like, 1½ to above 3 in. long, the rhachis and flowers quite glabrous in the typical form. Perianth-tube 2 to 3 lines long, slender, reflexed under the oblong limb. Torus rather oblique. Gland broad, flat, semicircular. Ovary very shortly stipitate; style long, filiform, with a long narrow somewhat oblique stigmatic cone. Fruit ovoid-globular, with a very short beak, about  $\frac{1}{2}$  in. diameter.

**S. Australia.** Gawler ranges; *Sullivan*.

**W. Australia,** Drummond, 3rd coll. n. 275, 5th coll. suppl. n. 18.

Var. *grammatophylla*. Rhachis of the raceme densely tomentose. I can perceive no other difference, but the specimens are not satisfactory.—*Grevillea grammophylla*, F. Muell. Fragm. v. 25; *Hakea grammophylla*, F. Muell. Fragm. vi. 214.—Central Mount Stuart, *M'Douall Stuart's Expedition*.

*H. Francisiana*, F. Muell. Fragm. i. 20, from Spencer's Gulf, *Francis*, of which I find no specimen among F. Mueller's collections, is probably, from the character given, not different from *H. multilineata*, which differs widely from all other species in the venation of the leaves.

61. **H. laurina**, R. Br. *Prot. Nov.* 29. A shrub of 10 ft. or more or a small tree attaining 30 ft., the branches minutely hoary-tomentose or glabrous as well as the foliage. Leaves narrowly elliptical-oblong or oblong-lanceolate, often shortly acuminate but obtuse, tapering into a long petiole, mostly 4 to 6 in. long, triplinerved besides the thick nerve-like margins and sometimes with an additional longitudinal vein between the nerves. Flowers "crimson" in large dense globular clusters sessile in the axils, the globular rhachis densely villous. Pedicels glabrous, about 2 lines long. Perianth glabrous, the tube scarcely above 3 lines long, reflexed under the oblong limb. Torus very oblique. Gland large, disk-shaped. Ovary shortly stipitate on the upper margin of the torus; style long, with a long narrow stigmatic cone. Fruit 1 to 1¼ in. long and  $\frac{3}{4}$  in. broad or rather larger, more or less cristate along the upper suture, with a very short small beak. Seed-wing decurrent along both margins round the base of the nucleus.—Meissn. in *DC. Prod.* xiv. 411; *H. eucalyptoides*, Meissn. in *Pl. Preiss.* i. 573, ii. 262, and in *DC. l.c.* 413; F. Muell. Fragm. iv. 130.

**W. Australia,** Drummond, 3rd coll. n. 274, 4th coll. n. 294; between Lucky Bay and Cape Arid, Baxter; towards Cape Riche, *Preiss.* n. 565; between Perth and King George's Sound, *Harvey*; Stirling, Fitzgerald, &c. ranges all the way to Cape Arid, *Maxwell*.

62. **H. obtusa**, Meissn. in DC. Prod. xiv. 411. A spreading shrub of 2 or 3 ft., the young shoots silky-tomentose, the adult foliage glabrous. Leaves oblong-lanceolate, obtuse or with a callous point contracted into a very short petiole or almost sessile,  $1\frac{1}{2}$  to  $2\frac{1}{2}$  in. long, prominently 3-nerved. Flowers (red?) in dense clusters on the old wood, the villous rhachis 1 to  $1\frac{1}{2}$  lines long. Pedicels glabrous, about 2 lines long. Perianth glabrous, the tube about 2 lines long, reflexed under the limb. Torus very oblique and narrow, the gland horseshoe-shaped occupying the lower portion. Ovary nearly sessile at the upper end of the torus; style very long with a long narrow stigmatic cone. Fruit nearly 1 in. long,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. broad, with a short straight beak; sometimes several fruits clustered together and almost connate.

**W. Australia.** Drummond, 5th coll. n. 409; coast hills near E. Mount Barren, Maxwell.

63. **H. cinerea**, R. Br. in Trans. Linn. Soc. x. 186, Prod. 385. A stout shrub of 5 or 6 ft., the branches densely tomentose. Leaves linear-cuneate or oblanceolate, obtuse, tapering to the base but scarcely petiolate, 4 to 7 in. long, very thick and rigid, of an ashy grey colour and minutely scabrous, very prominently triplinerved, with nerve-like margins. Flowers numerous in globular axillary clusters, the villous rhachis very short. Perianth glabrous, the tube very slender, about  $\frac{1}{2}$  in. long, reflexed under the oblong limb. Torus oblique. Gland not very prominent, but almost surrounding the sessile ovary. Style long, with a long narrow stigmatic cone. Fruit small, erect,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long including the rather long straight beak, 4 to 5 lines broad, smooth or tubercular-rugose. Seed-wing decurrent on the upper margin only of the nucleus.—Meissn. in DC. Prod. xiv. 414; *H. canescens*, Link. Enum. Hort. Berol. i. 118; *H. tricostata*, Hook. Ic. Pl. t. 435.

**W. Australia.** Lucky Bay, R. Brown, Baxter; Esperance Bay to Cape Arid, Maxwell.

64. **H. corymbosa**, R. Br. Prot. Nov. 28. A much-branched flat-topped shrub of 1 to 2 ft., the branches tomentose, the foliage minutely silky-pubescent or at length glabrous. Leaves linear or linear-cuneate, mucronate, tapering to the base but scarcely petiolate,  $1\frac{1}{2}$  to 3 in. long, very thick, 1-nerved underneath, almost nerveless above, the margins thick. Flowers in axillary clusters, the floral leaves sometimes crowded in false-whorls, the bud-scales or involucres sometimes persisting till the flowers expand. Flowers pale yellow, not very numerous. Pedicels glabrous, 1 to 2 lines long. Perianth glabrous, the tube narrow, fully 6 lines long, reflexed only under the oblong limb. Torus oblique. Gland almost disk-shaped. Ovary shortly stipitate on the upper end of the torus; style long, with a long narrow stigmatic cone. Fruit  $\frac{3}{4}$  to almost 1 in. long and almost as thick, with a very short straight beak. Seed-wing decurrent along both margins and round

the base of the nucleus but very narrow on the upper margin.—Meissn. in Pl. Preiss. i. 574, and in DC. Prod. xiv. 418.

**W. Australia.** King George's Sound or to the eastward, *Easter*; Stirling Range, F. Mueller; S.W. Bay, Kalgan and Tone rivers, *Oldfield*; Phillips ranges, *Maxwell*.

**SERIES 2. PETIOLARES.**—Leaves broad, triplinerved and reticulate, the veins prominent or obscure, tapering into a distinct petiole. Style not twice as long as the perianth.

65. **H. undulata**, R. Br. in *Trans. Linn. Soc.* x. 185, Prod. 384. An erect shrub of 6 to 8 ft., the young shoots ferruginous-tomentose or villous, the adult foliage glabrous. Leaves obovate ovate oblong or rarely lanceolate, more or less undulate and prickly-toothed, tapering into a petiole, 2 to 3 or rarely 4 in. long, rigid, triplinerved or quintuplinerved and reticulate. Flowers small, in axillary clusters, the rhachis villous, sometimes 1 line long. Pedicels glabrous, 1 to 2 lines long. Perianth glabrous, the tube not  $\frac{1}{2}$  lines long, revolute under the limb. Torus small, slightly oblique. Gland very small. Ovary shortly stipitate; style not long, with a narrow stigmatic cone. Fruit recurved at the base, 1 to  $1\frac{1}{4}$  in. long,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. broad, somewhat rugose, distinctly beaked. Seed-wing decurrent on the upper margin of the nucleus to the base.—Meissn. in Pl. Preiss. i. 566, and in DC. Prod. xiv. 407; Hook. Ic. Pl. t. 447; *Anadenia hakeoides*, Lindl. Swan Riv. App. 30.

**W. Australia.** King George's Sound, R. Brown, *Fraser*; thence to Swan river, Drummond, n. 92, 1st coll. n. 613; Green Mountain, Preiss, n. 560; Tone and Calning rivers, *Oldfield*.

66. **H. petiolaris**, Meissn. in Pl. Preiss. i. 577, and in DC. Prod. xiv. 413. A tall shrub, attaining 6 to 8 ft., glabrous and glaucous, the young shoots silky. Leaves orbicular or ovate, shortly acuminate, entire, contracted into a rather long petiole,  $1\frac{1}{2}$  to 4 in. long and sometimes quite as broad, thick and rigid, with nerve-like margins, more or less distinctly triplinerved or sometimes 5-plinerved and reticulate. Flowers very numerous in axillary clusters or racemes, the thick villous rhachis sometimes 3 or 4 lines long. Pedicels glabrous, 3 or 4 lines long. Perianth glabrous, the tube slender, nearly 3 lines long, revolute under the ovoid limb. Torus oblique. Gland thick, flat, semi-orbicular. Ovary stipitate on the upper margin of the torus; style rather long, with a narrow stigmatic cone. Fruit 1 to  $1\frac{1}{4}$  in. long, 6 to 8 lines broad, nearly smooth, with a rather narrow straight beak. Seed-wing rather broadly decurrent along both margins of the nucleus.—*H. crassinervia*, Meissn. in Pl. Preiss. i. 578, and in DC. Prod. xiv. 413.

**W. Australia**, Drummond, n. 95, 1st coll. n. 607; rocks of Mount Currie and Mount Hardy, Preiss, n. 557, 559. The relative prominence and length of 2 or more of the principal primary veins is very variable, even in different leaves of the same specimen.









67. **H. neurophylla**, Meissn. in Hook. Kew Journ. vii. 117, and in D.C. Prod. xiv. 413. Young shoots minutely hoary, the adult foliage glabrous and glaucous. Leaves ovate-elliptical to oblong-lanceolate, shortly acuminate or rarely almost obtuse, contracted into a broad but distinct petiole, 2 to 3 in. long, very thick and rigid, with nerve-like margins, irregularly triplinerved or quintuplinerved, with few anastomosing veins. Flowers in axillary clusters, the rhachis villous, about 1 line long. Pedicels glabrous, about 2 lines long, revolute under the ovoid-globular limb. Torus small, oblique. Gland small. Ovary sessile or nearly so; style not very long, with a straight stigmatic cone. Fruit about 1 in. long,  $\frac{3}{4}$  in. thick, with a nearly straight conical beak. Seed-wing rather broadly decurrent on the upper margin only of the nucleus.

**W. Australia.** Between Moore and Murchison rivers, Drummond, 6th coll. n. 195. Possibly a variety only of *H. petiolaris*.

68. **H. loranthifolia**, Meissn. in Pl. Preiss. i. 574, and in D.C. Prod. xiv. 411. A shrub of 6 ft., all our specimens quite glabrous. Leaves obovate to elliptical-oblong, acuminate with a rigid point, tapering into a petiole,  $1\frac{1}{2}$  to 2 in. long, very rigid, obscurely triplinerved with sometimes 2 or 3 additional longitudinal primary veins but very faint. Flowers small, in axillary clusters or short racemes, with a pubescent rhachis of  $\frac{1}{2}$  to 1 line. Pedicels glabrous, under 1 line long. Perianth glabrous, the tube under 2 lines long, reflexed under the limb. Torus small. Gland prominent and thick but small. Ovary contracted into a short stipe; style not long, with a straight stigmatic cone. Fruit about  $\frac{3}{4}$  in. long,  $\frac{1}{2}$  in. thick, with a very short slightly curved beak. Seed-wing decurrent on the upper margin only of the nucleus.

**W. Australia**, Drummond, 1st coll. n. 606; near York, Preiss, n. 567.

SERIES 3. SESSILES.—Leaves from very broad to oblong-lanceolate, 3- or more-nerved and reticulate, sessile or nearly so. Style not twice as long as the perianth.

69. **H. cucullata**, R. Br. Prot. Nov. 30. An erect stout shrub, attaining sometimes 12 to 14 ft., the branches softly tomentose and often villous with spreading hairs, the young shoots entirely tomentose or villous, the adult foliage glabrous or minutely scabrous. Leaves on the flowering branches sessile, orbicular or reniform, spreading and concave, 2 to 4 in. diameter, rigid, entire crenate sinuate or bordered by short prickly teeth, several-nerved and reticulate on both sides; those of the young plant or barren shoots oblong or elliptical, pinniveined and prickly-toothed. Flowers clustered in the axils, almost concealed at the base of the leaves. Pedicels not exceeding 1 line. Perianth glabrous, the tube 4 or 5 lines long, revolute under the ovoid-oblong limb. Torus oblique. Gland large, horseshoe-shaped. Ovary nearly sessile; style long with a long narrow stigmatic cone. Fruit oblique, about 1 in. long and  $\frac{3}{4}$  in. broad, more or less rugose, the beak

very short. Seed-wing decurrent along both margins round the base of the nucleus.—Meissn. in DC. Prod. xiv. 408; Hook. Ic. Pl. t. 441; Bot. Mag. t. 4528; copied into Lem. Fl. Jard. t. 45; *H. conchifolia*, Hook. Ic. Pl. t. 432; Meissn. l.c., *H. Victoriae*, Drumm. in Bot. Mag. lxxiv. Comp. 2; Meissn. l.c. 409.

**W. Australia.** Mount Gardner, Baxter; King George's Sound or towards Swan river, Drummond, 1st coll. n. 611, West Mount Barren, Drummond, 4th coll. n. 300; near Wuljemup and Mount Manypeak, Preiss, n. 537; Kalgan river, Oldfield; north of Stirling Range, F. Mueller.

The difficulty of reducing specimens of this fine plant to herbarium size is the cause of our inability to ascertain whether there really is any sufficient character to distinguish the three supposed species. I can find no difference in the flowers or fruits, and the leaves appear to vary, quite entire or dentate. The West Mount Barren specimens are described by Drummond as forming erect almost simple stems of 12 ft. or more, with closely packed leaves showing distinctly each year's growth of 6 to 9 inches, the lower or earlier ones very large, the upper ones gradually diminishing, and all with richly-coloured veins, the young ones whitish yellow, the intermediate ones orange, turning to a deep crimson. No such colours are described in the more common Stirling Range plant, and Drummond's dried specimens have entirely lost that which they had.

70. ***H. ferruginea***, Sweet, Fl. Austral. t. 45. A slender shrub of 3 or 4 ft., the young branches tomentose-pubescent. Leaves glabrous or villous, sessile, from cordate-ovate to ovate-lanceolate, shortly acuminate, with a callous point, entire or with slightly sinuate or undulate margins,  $1\frac{1}{2}$  to 3 in. long, flat, several-nerved and reticulate on both sides. Flowers small, in axillary clusters. Pedicels 1 to  $1\frac{1}{2}$  lines long. Perianth glabrous, about 3 lines long, much revolute, the upper segments scarcely 2 lines long, the limb ovoid. Torus oblique. Gland small, semi-orbicular. Ovary shortly stipitate; style not very long, with a narrow stigmatic cone. Fruit nearly 1 in. long and  $\frac{1}{4}$  in. broad, with a long narrow beak. Seed-wing decurrent down the upper margin only of the nucleus.—Bot. Mag. t. 3424; *H. repanda*, R. Br. Prot. Nov. 30; Meissn. in Pl. Preiss. i. 568, ii. 261, and in DC. Prod. xiv. 408; Lodd. Bot. Cab. t. 1750.

**W. Australia.** King George's Sound and adjoining districts, Baxter, Canningham, Drummond, 3rd coll. n. 279; Mount Wuljemup, Preiss, n. 547; Mount Barker, Oldfield; Stirling Range, F. Mueller; W. Mount Barren, Maxwell.

71. ***H. smilacifolia***, Meissn. in Pl. Preiss. i. 567, and in DC. Prod. xiv. 408. An erect shrub, attaining 3 or 4 ft., difficult to distinguish from *H. ferruginea* without the fruit. Branches tomentose-villous and often hirsute with spreading hairs. Leaves sessile, broadly ovate, acutely acuminate, rounded or cuneate at the base and never cordate, entire or slightly sinuate, 1 to 2 in. long, usually pubescent, several-nerved and reticulate. Flowers small, in axillary clusters, resembling those of *H. ferruginea*, but not seen in a very good state. Fruit very smooth, about  $\frac{1}{2}$  in. long and  $\frac{1}{4}$  in. broad, not so distinctly beaked as in *H. ferruginea*, and without the thick woody protuberance of most *Hakea* fruits.

**W. Australia.** Drummond, n. 97; Quan'en plains, Preiss, n. 535; Cunyng, Oldfield.

72. **H. elliptica**, R. Br. in *Trans. Linn. Soc.* x. 187, Prod. 386. A shrub attaining 6 to 8 ft., the branches and young shoots ferruginous-tomentose, the adult foliage glabrous or minutely pubescent. Leaves sessile or nearly so, broadly oval or elliptical, obtuse but usually with a small callous point,  $1\frac{1}{2}$  to 3 in. long, many-nerved and reticulate on both sides. Flowers numerous, in axillary clusters on very short racemes, the villous rhachis rarely above 1 line long. Pedicels glabrous, 2 to 4 lines long. Perianth glabrous, the tube slender, about 2 lines long, revolute under the ovoid limb. Torus oblique. Gland prominent, flat, semi-orbicular. Ovary stipitate on the upper margin of the torus; style filiform, with an erect stigmatic cone. Fruit about 1 in. long and nearly  $\frac{3}{4}$  in. broad, usually smooth, with a small oblique beak. Seed-wing decurrent on the upper margin about halfway down the nucleus.—Meissn. in Pl. Preiss. i. 568, and in DC. Prod. xiv. 412; *Conchium ellipticum*, Sm. in *Trans. Linn. Soc.* ix. 123.

**W. Australia.** King George's Sound and adjoining districts, R. Brown, A. Cunningham, Preiss, n. 558, and many others.

73. **H. ambigua**, Meissn. in Pl. Preiss. ii. 260, and in DC. Prod. xiv. 415. Branches tomentose or almost villous. Leaves from narrow-lanceolate to oblong-elliptical, obtuse or with a small callous point, contracted at the base but sessile or nearly so, minutely pubescent or glabrous when full grown, prominently triplinerved and sometimes reticulate between the nerves,  $1\frac{1}{2}$  to near 3 in. long. Flowers only seen in a rather imperfect state but apparently like those of *H. elliptica*. Fruit  $\frac{3}{4}$  to near 1 in. long,  $\frac{1}{2}$  in. broad, with a rather long nearly straight conical beak. Seed-wing decurrent on the upper margin only of the nucleus.—*H. trinervis*, Meissn. in DC. Prod. xiv. 414.

**W. Australia**, Drummond, 2nd coll. n. 277, 5th coll. n. 408. F. Mueller considers this as a narrow-leaved variety of *H. elliptica*, but the leaves have only 3 principal nerves even when broad, and the fruit has a much longer straight beak.

SERIES 4. NERVOSA.—Leaves lanceolate or linear, prominently 3- or more nerved (rarely 2- or 1-nerved when very narrow) smooth between the nerves.

74. **H. plurinervia**, F. Muell. Herb. A shrub of 6 or 7 ft., the young branches loosely tomentose. Leaves lanceolate, falcate, obtuse and often oblique at the end, with a small callous point, tapering into a very short petiole or almost sessile, 4 to 6 in. long and  $\frac{1}{2}$  to  $\frac{3}{4}$  in. broad, with about 7 longitudinal nerves prominent on both sides. Flowers small and numerous in axillary clusters, the villous rhachis rarely above 1 line long. Pedicels glabrous, 2 or 3 lines long. Perianth glabrous, the tube scarcely above 2 lines long, slender, revolute under the ovoid-globular limb. Torus small, oblique. Gland scarcely prominent. Ovary shortly stipitate; style not long, with an erect stigmatic cone. Fruit above 1 in. long and nearly  $\frac{3}{4}$  in. broad, more or less falcate, with an incurved conical beak. Seed-wing narrowly but unequally decurrent along both sides of the nucleus.

**Queensland.** Rockingham Bay, Dallachy.

**75. *H. dactyloides***, *Cuv. Anal. Hist. Nat.* i. 215, t. 12; *Ie.* vi. 25, t. 535. A tall shrub with erect branches, the young shoots usually silky, the adult foliage rarely retaining more or less of pubescence, usually quite glabrous. Leaves from linear-lanceolate to oblong-lanceolate, acute or scarcely obtuse, tapering into a short petiole, falcate oblique or straight, 2 to 4 in. long, rigid, prominently triplinerved, smooth between the nerves or rarely in the broader leaves a few irregular veins forming almost 1 or 2 additional longitudinal nerves. Flowers very small and numerous in axillary clusters or short racemes, the villous rhachis 1 to 1½ lines long. Pedicels silky-hairy, 1 to 1½ lines long. Perianth glabrous, the tube about 1 line long, revolute under the globular limb. Torus small, nearly straight. Gland small. Ovary shortly stipitate; style short, with an erect stigmatic cone. Fruit ¾ to 1 in. long, ½ to ⅔ in. thick, smooth or slightly rugose, with a very small straight beak. Seed-wing narrowly decurrent along the upper margin only of the nucleus.—R. Br. in *Trans. Linn. Soc.* x. 186, Prod. 385; Meissn. in DC. Prod. xiv. 415; Bot. Mag. t. 3760; *Banksia dactyloides*, Gærtn. Fr. i. 221, t. 47; *Conchium dactyloides*, Vent. Jard. Malm. t. 110; Sm. in *Trans. Linn. Soc.* ix. 123; *Banksia oleifolia*, Salisb. Prod. 51; *Conchium nervosum*, Sm. in Willd. Enum. Hort. Berol. 141; *Hakea nervosa*, Knight, Prot. 108; *H. ferruginea*, Lodd. Bot. Cab. t. 1501? not of Sw.

**N. S. Wales.** Port Jackson to the Blue Mountains, R. Brown, *Siber*, n. 12, and many others; Clarence river, Beckler; New England, C. Stuart, some of the latter specimens with more rigid almost pungent narrow leaves, approaching those of *H. ulicina*, but with silky pedicels.

**76. *H. ulicina***, R. Br. Prot. Nov. 29. Very near the narrow-leaved forms of *H. dactyloides*, but the leaves all linear acute and pungent-pointed, 4 to 8 in. long in the typical form, more spreading rather broader and 1 to 2 in. long in some specimens, very rarely 2 lines wide, prominently 1- to 3-nerved underneath, the nerves less conspicuous and sometimes obsolete on the upper surface. Flowers still smaller than in *H. dactyloides*, the pedicels always glabrous as well as the perianth. Fruit rarely above ½ in. long, with a short straight beak. Seed as in *H. dactyloides*.—Meissn. in DC. Prod. xiv. 415; *H. angustifolia*, Hortul. (Meissn.).

**N. S. Wales.** Twofold Bay, Baxter, F. Mueller.

**Victoria.** Glenelg river, Robertson; Grampians, Mitchell, F. Mueller; Port Phillip, Mount Sturgeon and Mount Abrupt, F. Mueller.

**Tasmania.** Flinders island, Milligan.

Var. *carinata*, F. Muell. Leaves mostly 1-nerved underneath, nerveless above, but in some specimens normal 3 nerved leaves mixed with the others.—*H. carinata*, F. Muell.; Meissn. in Linnaea xxvi. 360, and in DC. Prod. xiv. 418.

**S. Australia.** Mount Lofty and Bugle Range, F. Mueller; near Adelaide, Whitaker, Blandowski; Encounter Bay, Whittaker; Tatiara country, Woods.

**77. *H. falcata***, R. Br. Prot. Nov. 29. A tall shrub, closely and minutely tomentose, becoming at length glabrous. Leaves lanceolate or almost linear, acute or with a callous point, straight or somewhat fal-

cate, contracted into a very short petiole,  $1\frac{1}{2}$  to  $2\frac{1}{2}$  in. long, more or less prominently triplinerved. Flowers small and numerous in axillary clusters. Pedicels glabrous, about 1 line long. Perianth glabrous, slender, nearly 2 lines long, revolute under the globular limb. Torus small, oblique. Gland rather thick. Ovary sessile on the upper margin of the torus; style not very long, with a narrow stigmatic cone. Fruit from under  $\frac{3}{4}$  to nearly 1 in. long and about  $\frac{1}{2}$  in. broad, with a small more or less incurved beak. Seed-wing decurrent along both margins round the base of the nucleus.—Meissn. in Pl. Preiss. i. 572 (partly), ii. 262, and in DC. Prod. xiv. 414.

**W. Australia.** King George's Sound or to the eastward, *Bacter*, *Drummond*, 2nd coll. n. 333, and (5th coll.?) suppl. n. 15, 16. The leaf-veins are sometimes as prominent as in *H. dactyloides*, from which *H. falcata* is then only to be distinguished by the flowers not quite so small and by the seed-wing decurrent all round the nucleus. Sometimes even on the same specimen the leaves are thicker and the veins obscure almost as in *H. incrassata*. The fruit varies much in size.

78. **H. pycnoneura**, Meissn. in Hook. Kew Journ. vii. 117, and in DC. Prod. xiv. 414. A straggling shrub of several ft., the branches and foliage minutely silvery-silky. Leaves linear, obtuse or with a callous point, tapering at the base but scarcely petiolate, 4 to 8 in. long, very thick and rigid, usually flexuous, the margins and midrib prominent and sometimes 1 or 2 additional short longitudinal veins. Flowers purple, in short very dense axillary racemes, the thick ovoid villous rhachis 3 to 4 lines long. Pedicels glabrous, 2 or 3 lines long. Perianth glabrous, the tube 2 lines long, reflexed under the ovoid-oblong limb. Torus small. Gland semiannular, not very prominent. Ovary scarcely stipitate; style short, with a long stigmatic cone. Fruit usually  $\frac{3}{4}$  in. long, about  $\frac{1}{2}$  in. broad, with a short straight beak; in some specimens the whole fruit longer. Seed-wing decurrent along both margins round the base of the nucleus.

**W. Australia.** Murchison river, *Oldfield*, *Drummond*, 6th coll. n. 193.

SERIES 5. UNINERVES.—Leaves narrow or small, flat, 1-nerved with nerve-like margins. Fruit-valves without dorsal appendages.

79. **H. stenocarpa**, R. Br. Prot. Nor. 29. A glabrous bushy shrub of several ft. Leaves linear or linear-lanceolate, acute or with a callous point, contracted at the base but scarcely petiolate,  $1\frac{1}{2}$  to 4 in. long, with a prominent midrib and nerve-like margins as in *H. marginata*. Flowers very small, in axillary clusters, the rhachis very short and villous. Pedicels glabrous, not 1 line long. Perianth glabrous, scarcely  $1\frac{1}{2}$  lines long, revolute under the limb. Torus and gland small. Ovary almost sessile; style not long, with a straight stigmatic cone. Fruit 1 to  $1\frac{1}{2}$  in. long, 2 to 3 lines broad at the base, tapering into a long slightly incurved beak. Seed-wing narrowly decurrent along both margins of the nucleus.—Meissn. in Pl. Preiss. i. 575, and in DC. Prod. xiv. 417; Hook. Ic. Pl. t. 444.

**W. Australia.** Swan river, *Fraser*, *Drummond*, 1st coll., *Preiss*, n. 574.

80. **H. marginata**, R. Br. in *Trans. Linn. Soc.* x. 185, *Prod.* 385. A bushy shrub, attaining 6 to 8 ft., the young shoots minutely silky-pubescent, the adult foliage glabrous or nearly so. Leaves lanceolate, acute, pungent-pointed, shortly contracted at the base but scarcely petiolate,  $\frac{3}{4}$  to  $1\frac{1}{2}$  in. long, rather thick and rigid, with the midrib and nerve-like margins prominent on both sides, otherwise veinless. Flowers small, in axillary clusters. Pedicels glabrous, scarcely 1 line long. Perianth glabrous, the tube nearly 2 lines long, revolute under the ovoid limb. Torus oblique. Gland rather large, almost stipitate. Ovary very shortly stipitate on the upper margin of the torus; style not long, with a straight stigmatic cone. Fruit about  $\frac{3}{4}$  in. long, 3 to 4 lines broad, with a rather long straight beak. Seed-wing decurrent along the upper margin only of the nucleus.—Meissn. in *Pl. Preiss.* i. 575, and in *DC. Prod.* xiv. 418.

**W. Australia.** Lucky Bay, R. Brown, Baxter; Hotham river, Oldfield; between King George's Sound and Swan river, Harvey, Drummond, 1st coll. n. 604.

81. **H. myrtoides**, Meissn. in *Pl. Preiss.* i. 577, and in *DC. Prod.* xiv. 418. A spreading shrub of 2 or 3 ft., the branches rather loosely villous at length glabrous. Leaves sessile, ovate, usually broad, mucronate with a rigid or pungent point,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long, rather shining, with a prominent midrib and nerve-like margins, faintly pinniveined and reticulate. Flowers "pink," in axillary clusters, the rhachis very short and villous. Pedicels glabrous, 2 to 3 lines long. Perianth glabrous, the tube about 2 lines long, reflexed under the globular limb. Torus nearly straight. Gland broad. Ovary almost sessile; style long, with a long narrow stigmatic cone. Fruit scarcely  $\frac{1}{2}$  in. long, about  $\frac{1}{4}$  in. broad, with a rather long incurved beak. Seed-wing broadly decurrent along both margins round the base of the nucleus.—Bot. Mag. t. 4643, copied into *Lem. Fl. Jard.* t. 272.

**W. Australia.** Swan river, Fraser, Drummond, n. 96, 1st coll. n. 608, *Preiss.* n. 534, Oldfield.

82. **H. costata**, Meissn. in *Pl. Preiss.* i. 575, and in *DC. Prod.* xiv. 418. An erect shrub attaining 3 or 4 ft., the branches loosely tomentose or villous. Leaves crowded, those of the flowering branches linear, pungent-pointed, rigid, under  $\frac{1}{2}$  in. long, with thickened margins and a very prominent keel or midrib, the lower ones sometimes oblong, flat, 2 lines broad and tapering into a short petiole, 1-nerved but otherwise veinless. Flowers small, in numerous axillary clusters. Pedicels glabrous, under 1 line long. Perianth white, glabrous, the tube about  $1\frac{1}{2}$  lines long, reflexed under the globular limb. Torus small. Gland very small. Ovary sessile or nearly so; style long and slender, with a long narrow stigmatic cone. Fruit under  $\frac{1}{2}$  in. long, 3 or 4 lines broad, shortly beaked. Seed-wing broadly decurrent along both margins of the nucleus.

**W. Australia**, Drummond, n. 17, and 2nd coll. n. 332; Quangen plains, *Preiss.* n. 532, 533 (*Meissn.*); near Yatheroo and Toodyay, Oldfield.

SERIES 6. ENERVES.—Leaves mostly flat, obscurely pinniveined, the midrib not prominent, entire prickly-toothed or lobed. Fruit-valves with dorsal horns or protuberances.

83. **H. oleifolia**, R. Br. in *Trans. Linn. Soc.* x. 185, Prod. 385. A tall shrub or small tree of 15 to 20 ft., the branches and young shoots ferruginous or silky-tomentose, the adult foliage glabrous or nearly so. Leaves oblong-lanceolate or cuneate-oblong, rounded at the end, with a fine minute point, contracted into a short petiole, 1 to above 2 in. long, rather thick, pale coloured, pinniveined but the midrib usually scarcely prominent and the veins immersed or inconspicuous. Flowers in dense axillary clusters or racemes, the villous rhachis 1 to 2 lines long. Pedicels glabrous, about 3 lines long. Perianth glabrous, the tube not 2 lines long, reflexed under the globular limb. Torus small, oblique. Gland prominent but small. Ovary very shortly stipitate; style not very long, with an erect stigmatic cone. Fruit  $\frac{3}{4}$  to 1 in. long,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. broad, rugose, scarcely beaked, the valves with dorsal conical horns near the end, sometimes wanting on one valve. Seed-wing shortly decurrent along the upper margin of the nucleus.—Meissn. in Pl. Preiss. i. 571, and in DC. Prod. xiv. 416; *Conchium oleifolium*, Sm. in *Trans. Linn. Soc.* ix. 124; *Hakea ligustrina*, Knight, Prot. 108.

**W. Australia.** King George's Sound and adjoining districts, *R. Brown*, *Drummond*, n. 14, and 5th coll. n. 410, *Preiss*, n. 554, *Oldfield*, *Maxwell*, *F. Mueller*.

84. **H. florida**, R. Br. in *Trans. Linn. Soc.* x. 183, Prod. 384. An erect rigid shrub, attaining 5 or 6 ft., the branches and young leaves pubescent or villous, the adult foliage glabrous. Leaves sessile or nearly so, lanceolate or linear-lanceolate, very acute and pungent-pointed, bordered by a few prickly teeth or small lobes, one pair usually close to the cuneate base, 1 to  $1\frac{1}{2}$  or rarely 2 in. long, thick and veinless above, the midrib alone prominent underneath. Flowers very small, in axillary clusters, the villous rhachis very short. Pedicels glabrous, about 2 lines long. Perianth glabrous, the tube slender, scarcely  $1\frac{1}{2}$  lines long, revolute under the globular limb. Torus small. Gland prominent, truncate. Ovary stipitate; style not very long, with a nearly straight rather broad stigmatic cone. Fruit above 1 in. long, nearly  $\frac{3}{4}$  in. thick, scarcely beaked, the valves with very short dorsal protuberances near the end.—Meissn. in Pl. Preiss. i. 562, and in DC. Prod. xiv. 405; Bot. Mag. t. 2579.

**W. Australia.** King George's Sound, *R. Brown*, *Preiss*, n. 584, *Oldfield*; Champion Bay, *Bower*; Tulbinup ranges, *Marwell*. The leaves are sometimes like those of *H. linearis*, but the species is at once distinguished by the pubescent branches and rhachis and by the stigmatic cone.

85. **H. varia**, R. Br. in *Trans. Linn. Soc.* x. 183, Prod. 383. A bushy or scrubby shrub, erect and 6 to 8 ft. high or sometimes spreading and diffuse, the branches tomentose and hirsute with spreading hairs or nearly glabrous. Leaves silky when young, glabrous when full grown, lanceolate linear-oblong or cuneate, with 2 or 3 short prickly lobes at the end or sinuate and prickly-toothed to below

the middle, or pinnatifid with few narrow or broad prickly-pointed lobes, rarely quite entire and linear, from under 1 in. long in some specimens to near 2 in. in others, thick and obscurely pinniveined or veinless, always tapering at the base. Flowers small, in clusters terminating short leafy branches or sessile in the upper axils, the villous rhachis rarely 1 line long. Pedicels glabrous, about 2 lines long or sometimes longer. Perianth glabrous, not 2 lines long, recurved under the globular limb. Torus small. Ovary shortly stipitate; style not long, with a straight stigmatic cone. Fruit  $\frac{3}{4}$  in. long,  $\frac{1}{2}$  in. broad, the valves with dorsal horns near the end. Seed-wing narrowly decurrent along the upper margin of the nucleus.—Meissn. in Pl. Preiss. i. 561, and in DC. Prod. xiv. 405; *H. attenuata* and *H. ilicifolia*, R. Br. in Trans. Linn. Soc. x. 183, 184; Meissn. in Pl. Preiss. i. 563 and in DC. Prod. xiv. 406; *H. tuberculata*, R. Br. Prot. Nov. 28; Meissn. II. cc. 561 and 405; *H. lasiocarpa*, R. Br. Prot. Nov. 27; Meissn. II. cc. 561 and 403 (as to Baxter's and Drummond's specimens); *H. heterophylla* and *H. intermedia*, Hook. Ic. Pl. t. 437, 445.

**W. Australia.** King George's Sound and Lucky Bay, *R. Brown*; eastward to Cape Paisley, *Maxwell*; from the same districts and towards Swan river, *Drummond*, n. 173, 197, 1st coll. n. 615, 617, 4th coll. n. 299, *Preiss*, n. 593, 600, *Oldfield*, F. Mueller.

The several supposed species here united are distinguished chiefly by the foliage which is truly protean, and specimens might be selected to represent several types so marked in their aspect that I should have retained them as distinct species were it not that other specimens occur combining the different forms of leaves on one stem, if not on the same branch. *H. ilicifolia* has generally rather large and broadly pinnately-toothed leaves, only shortly narrowed at the base; *H. attenuata* has them broad and toothed or shortly lobed at the end, tapering into a long narrow base; *H. varia* proper rather long leaves from linear almost terete and entire to deeply pinnatifid; *H. tuberculata*, small, usually crowded leaves, cuneate or linear, and toothed, pinnatifid, serrate or entire, in a few specimens scarcely exceeding  $\frac{1}{2}$  in.; all these forms apparently distinct in luxuriant specimens, but variously mixed in stunted scrubby ones. The fruit is frequently tuberculate or muricate but sometimes smooth in *H. tuberculata*, smooth or rarely muricate in *H. varia* proper. *H. lasiocarpa*, Br., is founded on a stunted specimen, little more than a fragment, with deeply-divided narrow leaves, and the scaly buds larger than usual, but showing no other difference.

**SERIES 7. TERETIFOLIA.**—Leaves linear-terete, entire, rarely a few of the lower ones flat. Fruit-valves without any dorsal appendages.

**86. *H. sulcata***, R. Br. in *Trans. Linn. Soc.* x. 180, *Prod.* 382, *Prot.* Nov. 27. An erect shrub attaining 5 or 6 ft., but often low, the young shoots silky, the adult foliage glabrous. Leaves linear-terete, angular and furrowed, rigid, mucronate, sometimes pungent-pointed, from under 2 in. to above 4 in. long, in the typical form. Flowers small, in dense axillary clusters, the small rhachis densely villous. Pedicels glabrous,  $\frac{1}{2}$  to 1 line long. Perianth glabrous, varying from  $1\frac{1}{2}$  to 3 lines, the tube slender, reflexed under the rather large limb. Torus and gland small. Ovary sessile; style rather long, with a long stigmatic cone. Fruit ovoid, about  $\frac{1}{2}$  in. long or rather longer, with a short narrow-conical straight beak. Seed-wing decurrent along the

upper margin of the nucleus.—Meissn. in Pl. Preiss. i. 556 and in DC. Prod. xiv. 399.

**W. Australia.** Lucky Bay, R. Brown; Swan river, Drummond, 1st coll. n. 599, Preiss. n. 608; Hill river, Old Gold; towards King George's Sound, Drummond, 5th coll. n. 411.

Var. *scoparia*. Branches and bud scales more pubescent. Leaves mostly longer, sometimes 8 in., less pointed, but occasionally short on some branches. Perianth sometimes larger sometimes rather smaller than the average typical size.—*H. scoparia*, Meissn. in Pl. Preiss. i. 556, and in DC. Prod. xiv. 399; Bot. Mag. t. 4644, copied into Lem. Fl. Jard. t. 376.—Swan river, Drummond, 1st coll. n. 600.

Var. *Gilbertii*. Leaves short, slender, with rather long pungent points. Fruit rather smaller.—*H. Gilbertii*, Kipp. in Hook. Kew Journ. vii. 115; Meissn. in DC. Prod. xiv. 399.—Swan river, Gilbert.

87. **H. Meissneriana**, Kipp. in Hook. Kew Journ. vii. 114. A tall erect shrub, the young shoots silky, the adult foliage glabrous. Leaves linear-terete, rigid, obscurely or more distinctly angular and striate, obtuse or mucronate, mostly 2 to 4 in. long. Flowers small, in dense axillary racemes or clusters, the villous rhachis 2 to 4 lines long. Pedicels glabrous, scarcely  $\frac{1}{2}$  line long. Perianth glabrous, the tube about 1½ lines long, revolute under the globular limb. Torus oblique. Gland small. Ovary contracted into a very short stipes; style not long, with a nearly straight stigmatic cone. Fruit ovoid, somewhat incurved, about  $\frac{1}{2}$  in. long, smooth or nearly so, with a short conical beak. Seed-wing narrowly decurrent on both margins of the nucleus.—Meissn. in DC. Prod. xiv. 399.

**W. Australia**, Drummond, 3rd coll. n. 272, 5th coll. suppl. n. 16, 6th coll. n. 191.

88? **H. subsulcata**, Meissn. in Pl. Preiss. i. 555, and in DC. Prod. xiv. 398. A shrub of 6 or 7 ft., the young shoots silky-pubescent, the adult foliage usually glabrous. Leaves terete, mucronate, finely striate, 2 to 4 in. long. Flowers not seen. Fruit densely clustered, ovoid, erect, smooth,  $\frac{1}{2}$  to 3 in. long, 3 or 4 lines broad, tapering into a conical erect beak. Seed-wing decurrent along the upper margin of the nucleus but scarcely reaching the base.

**W. Australia**, Drummond, 5th coll. suppl. n. 15, Preiss. n. 607.

89. **H. Lehmanniana**, Meissn. in Pl. Preiss. i. 557, and in DC. Prod. xiv. 398. A bushy shrub attaining from 2 to 4 ft., glabrous or the branches minutely pubescent. Leaves linear-terete 3-angled or channeled above, not attenuate at the base, rigid, mucronulate, from under 1 in. to nearly 3 in. long. Flowers in very dense axillary clusters, the villous rhachis very short. Pedicels glabrous, about 2 lines long. Perianth glabrous, the tube scarcely 2 lines long, revolute under the limb. Torus rather oblique. Gland large, semiannular. Ovary shortly stipitate; style long, with a rather long straight stigmatic cone. Fruit about 1 in. long and above  $\frac{1}{2}$  in. broad, more or less muricate with fringed tubercles or branching prickles, the small conical beak rather oblique. Seed-wing decurrent down both margins to the base of the nucleus.

**W. Australia**, Drummond, 3rd coll. n. 273; Gordon river, Preiss. n. 604; be VOL. V.

tween Swan river and King George's Sound, *Harvey*; Salt, Gordon, Franklin, and Tone rivers, *Maxwell*.

90. ***H. flexilis***, *F. Muell.* in *Linnæa* xxvi. 359, *not of R. Br.* A tall shrub or small tree of about 20 ft., the branches and foliage quite glabrous. Leaves linear-terete, very spreading, mostly angular or slightly compressed, acute and sometimes pungent-pointed, not attenuate at the base, mostly  $1\frac{1}{2}$  to 3 in. long. Flowers small, in axillary clusters, the hirsute rhachis very short. Pedicels glabrous,  $\frac{1}{2}$  to 1 line long. Perianth glabrous, the tube scarcely 2 lines long, revolute under the globular limb. Ovary nearly sessile; style not long, with a straight stigmatic cone. Fruit  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long,  $\frac{4}{5}$  or 5 lines broad, smooth or irregularly rugose, with a short conical straight or slightly inflexed beak. Seed-wing decurrent along the upper margin and sometimes partially also along the lower margin of the nucleus.—Meissn. in DC. Prod. xiv. 396 (*H. flexibilis* by a misprint) under *H. flexilis*, Br.

**Victoria.** N.W. districts of the Colony, *L. Morton*.

**S. Australia.** Murray Desert and Lake Hindmarsh, *F. Mueller*; near Adelaide, *Herb. Hooker*; Kangaroo island, *F. Mueller*, *Waterhouse*.

**SECT. 4. MANGLESIOIDES.**—Racemes short or reduced to sessile clusters, enclosed before their development in an involucrum or bud of imbricate scales. Perianth glabrous, slender, straight, the limb erect in the bud. Stigmatic cone erect.

The flowers in this section are quite those of the section *Manglesia* of *Grevillea*, except that the style is filiform.

91. ***H. nitida***, *R. Br.* in *Trans. Linn. Soc.* x. 184, *Prod.* 384. A dense shrub of 6 to 8 ft., the branches and foliage quite glabrous. Leaves obovate oblong or rarely lanceolate, sometimes quite entire and obtuse with a small pungent point, sometimes acute pungent-pointed and irregularly bordered by a few prickly teeth or lobes, tapering at the base but scarcely petiolate,  $1\frac{1}{2}$  to 3 or even 4 in. long, thick and veinless or obscurely and very obliquely pinniveined. Flowers small and numerous in axillary racemes, the rhachis rigid, tomentose,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long. Pedicels glabrous, filiform, 2 to 3 lines long. Perianth glabrous, straight, the tube about  $1\frac{1}{2}$  lines long, the limb globular, erect in the bud. Torus small. Gland small but prominent. Ovary nearly sessile; style short with an erect broad stigmatic cone. Fruit 1 in. long or rather more,  $\frac{3}{4}$  in. broad, scarcely beaked, with a conical horn near the end of one or both the valves. Seed-wing decurrent along the upper margin of the nucleus and sometimes narrowly so along the lower margin.—Meissn. in DC. Prod. xiv. 406; Bot. Mag. t. 2246; *H. pycnobotrys*, *F. Muell.* *Fragm.* v. 72.

**W. Australia.** Lucky Bay, *R. Brown*; probably from the same district, *Drommond*, 4th coll. n. 298; S.W. Bay, *Oldfield*; Gardner and Phillips rivers, E. Mount Barren, Esperance Bay, *Maxwell*.

92. ***H. Oldfieldii***, *Benth.* Glabrous in all its parts. Leaves terete, smooth, pungent-pointed,  $\frac{3}{4}$  to near 2 in. long, all undivided. Flowers small, in axillary racemes or clusters, the rhachis 1 to 2 lines long,

quite glabrous as well as the flowers. Pedicels filiform, at first short, 3 or 4 lines long when the flowers are fully out. Perianth slender, straight, scarcely 2 lines long, with a globular limb. Torus small. Gland prominent, obovate. Ovary shortly stipitate; style not long, with an erect stigmatic cone. Fruit not seen.

**W. Australia.** Champion Bay, Oldfield; in the interior, J. S. Roe.

93. **H. suaveolens**, R. Br. in *Trans. Linn. Soc.* x. 182, *Prod.* 383. An erect shrub of 5 or 6 ft., the young shoots silky-pubescent, the adult foliage glabrous. Leaves terete, erect, a few of them undivided grooved above and 3 or 4 in. long, but mostly pinnate with few or many erect segments of 1 or 2 in., all rigid and pungent-pointed. Flowers small, in dense racemes in the upper axils, the rigid pubescent rhachis  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long. Pedicels glabrous, 2 or 3 lines long. Perianth glabrous, straight; the tube about  $1\frac{1}{2}$  lines long, the limb globular, erect. Torus small. Gland small but prominent. Ovary shortly stipitate; style short, with an erect stigmatic cone. Fruit  $\frac{3}{4}$  to 1 in. long,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. thick, smooth and almost shining but marked with warts, with a very small incurved almost lateral beak, the valves with very small dorsal protuberances near the end. Seed-wing decurrent on the outer side only.—Meissn. in Pl. Preiss. i. 558, and in DC. *Prod.* xiv. 403; *H. pectinata*, Colla, Hort. Rip. App. 2. 320, t. 11.

**W. Australia.** Middle Island, R. Brown; King George's Sound or adjoining districts, Labillardière (Meissn.), A. Cunningham, Drummond, n. 93, Preiss, n. 605, Collie, Oldfield, F. Mueller; eastward to Eyre's range, Cape Le Grand and Cape Arid, Maxwell.

*Conchium drupaceum*, Gaertn. f. Fr. iii. 217, t. 219 (*Hakea drupacea*, Roem. and Schult. Syst. iii. 426), which Gaertner had from Labillardière, is probably this species.

94. **H. lissocarpha**, R. Br. *Prot. Nov.* 27. A densely branched rigid shrub of 2 or 3 ft., the branches and young shoots more or less tomentose or hirsute, the foliage minutely scabrous-punctate after the hairs have worn off or rarely glabrous and smooth. Leaves pinnately divided into 3 to 7 terete rigid pungent-pointed segments, all entire or some of them forked, sometimes very short and thick, sometimes longer and slender, the rhachis often somewhat flattened and grooved above, the whole leaf 1 to  $1\frac{1}{2}$  in. long. Flowers small, in dense almost sessile axillary clusters, the thick villous rhachis 1 to  $1\frac{1}{2}$  lines long. Pedicels glabrous, about 3 lines long. Perianth glabrous, scarcely  $1\frac{1}{2}$  lines long, straight, the globular limb erect in the bud. Torus small. Gland semiannular. Ovary shortly stipitate; style short, with an erect stigmatic cone. Fruit  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long, 3 to 4 lines broad, scarcely beaked, with small dorsal protuberances near the end of the valves, sometimes obsolete. Seed-wing decurrent along the upper margin of the nucleus.—Meissn. in Pl. Preiss. i. 559, and in DC. *Prod.* xiv. 403; *H. intricata*, R. Br. *Prot. Nov.* 27; Meissn. in DC. *Prod.* xiv. 404; *H. petrophilooides*, Hortul. (Meissn.)

**W. Australia.** Swan river, Fraser; S. coast, Baxter; from Swan river to King

George's Sound and Cape Riche, *Drummond*, n. 106, 172, 1st coll. n. 602, 4th coll. n. 292, *Preiss*, n. 598, *Harvey*; Stirling range, *Oldfield*, *Maxwell*.

The leaves when not much divided resemble those of some forms of *H. varia*, the flowers are very different.

**95. *H. bipinnatifida***, *R. Br. Prot. Nov.* 28. A bushy shrub of 2 or 3 ft., the branches and foliage glabrous. Leaves terete, once or twice ternately divided or pinnate with the lower segments forked or trifid, the segments all slender, usually divaricate, mucronate-acute,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long, smooth or singly grooved, the whole leaf under 2 in. long. Flowers small, in short dense almost sessile racemes, axillary or terminating short leafy branches, the villous rhachis  $\frac{1}{4}$  to  $\frac{1}{2}$  in. long. Pedicels glabrous, 1 to 3 lines long. Perianth glabrous, scarcely  $1\frac{1}{2}$  lines long, straight, the limb erect in the bud. Torus straight. Gland prominent, semiannular. Ovary shortly stipitate; style short, with an erect stigmatic cone. Fruit nearly 1 in. long, 3 to 4 lines broad, smooth, tapering at both ends, the valves with a prominent dorsal horn near the end. Seed-wing decurrent along the upper margin of the nucleus.—Meissn. in Pl. *Preiss*. i. 560, and in DC. *Prod.* xiv. 403.

**W. Australia.** W. coast, *Bandin's Expedition*; Swan river, *Fraser, Drummond*, n. 17, 22, 104, *Preiss*, *Oldfield*.

## 22. BUCKINGHAMIA, F. Muell.

Flowers hermaphrodite. Perianth irregular, the tube slender, revolute under the globular limb. Anthers all perfect, sessile in the base of the concave laminae, the connective not produced beyond the cells. Hypogynous glands united in a single semiannular truncate and crenulate gland. Ovary shortly stipitate, with 4 collateral amphitropous ovules attached about the middle; style filiform, with an oblique almost lateral disk at the end, with the small stigma in its centre. Fruit a compressed follicle, opening along the upper suture. Seeds very flat and thin, surrounded by a narrow wing-like margin.—Tree. Leaves undivided, pinniveined. Flowers small, pedicellate in pairs in terminal racemes. Bracts none or very deciduous.

The genus is limited to a single species endemic in tropical Australia and closely allied to the *Grevillea* of the section *Cycloptera*, differing only in the number of ovules and seeds.

**1. *B. celsissima***, *F. Muell. Fragm.* vi. 248. A tree attaining 60 ft. or more, the young branches and inflorescence minutely hoary-tomentose. Leaves petiolate, elliptical-oblong, acute or obtuse, tapering at the base, 3 to 5 in. long, dark green and apparently glabrous above but sprinkled with minute hairs only visible under a lens, glaucous or almost silvery underneath, covered with the same grevilleoid hairs. Racemes 4 to 8 in. long, somewhat secund, the flowers crowded nearly from the base. Pedicels slender, about  $\frac{1}{4}$  in. long. Perianth silvery, 3 to 4 lines long. Anthers broad, with a thick rather













broad connective. Ovary glabrous. Follicle broadly and obliquely ovate, about 1 in. long, with a short incurved point. Seed broadly obovate.

**Queensland.** Rockingham Bay, Dallachy.

### 23. DARLINGIA, F. Muell.

Flowers hermaphrodite. Perianth regular, the tube slender, straight, the limb globular, erect. Anthers all perfect, sessile in the base of the concave laminae, the connective produced beyond the cell into a minute gland-like appendage. Hypogynous glands 4, globular. Ovary sessile, with 4 collateral amphitropous ovules attached about the middle; style filiform, with an ovoid-fusiform end and a small terminal stigma. Fruit a compressed follicle, opening along the upper suture. Seeds very flat and thin, surrounded by a wing-like margin.—Tree. Leaves entire or pinnatifid, pinniveined. Flowers sessile in pairs in terminal paniculate racemes. Bracts none or minute and deciduous.

The genus is limited to a single species endemic in tropical Australia. Like *Buckinghamia* it is closely allied to *Grevillea*, differing in the number of ovules and seeds, and distinguished from *Buckinghamia*, like the sections *Anadonia* and *Manglesia* from *Grevillea*, chiefly in the straight perianth. The sessile flowers and minute appendages to the anthers remove it also in a slight degree from both genera.

1. **D. spectatissima**, F. Muell. *Fragn.* v. 152. A tree, quite glabrous or the inflorescence minutely ferruginous-pubescent. Leaves oblong or oblanceolate, obtuse or acute, entire or deeply 3-lobed or pinnatifid with 5 to 7 long lanceolate acute lobes, tapering into a rather long petiole, the whole leaf 8 or 9 in. to 1½ ft. long, pinniveined with rather numerous almost parallel primary veins. Racemes in the upper axils 4 to 8 in. long, forming a terminal panicle shorter than the leaves, with numerous flowers. Perianth glabrous, 3 in. long, the tube slender, the laminae tipped with small dorsal obtuse appendages, distinct in the bud. Ovary villous; style long. Follicle 1½ to nearly 2 in. long, nearly 1 in. broad, recurved. Seeds oblong, as long as the follicle.—*Helicia Darlingiana*, F. Muell. *Fragn.* v. 24; *Knightia Darlingii*, F. Muell. l.c. 152.

**Queensland.** Rockingham Bay, Dallachy.

TRIBE 6. EMBOTHRIUM.—Ovules several, imbricate in 2 rows. Seeds usually separated by thin laminae or a mealy substance, (possibly the outer coating of the seeds detached and united as in *Banksia*).

### 24. TELOPEA, R. Br.

(*Hylogyne, Salisb.*)

Flowers hermaphrodite. Perianth irregular, the tube open early on the under-side, tapering and recurved under the limb, the laminae oblique, broad. Anthers broad, sessile at the base of the laminae, the

connective not produced beyond the cells. Hypogynous glands united in a short very oblique nearly complete ring. Ovary contracted into a long stipe and tapering into a long style, clavate at the end, with a lateral stigma; ovules several, imbricate upwards in 2 rows, laterally attached near the base. Fruit a recurved coriaceous follicle. Seeds flat, terminating in a nearly straight or oblique membranous wing.—Tall shrubs. Leaves alternate, entire or toothed. Flowers pedicellate in pairs, in very dense globular or ovoid terminal racemes, surrounded by an involucre of imbricate coloured bracts, the bracts within the raceme small. Perianths as well as the whole inflorescence red.

The genus is endemic in Australia. It is allied in many respects to *Hakea*, differing chiefly in the number of ovules and seeds, and in habit.

Leaves prominently veined, mostly toothed. Involucre 2 to 3 in.

long . . . . . 1. *T. speciosissima*.

Leaves scarcely veined, mostly entire. Involucre under 1 in.  
long.

Involucre glabrous . . . . . 2. *T. oreades*.

Involucre silky-ferruginous . . . . . 3. *T. truncata*.

**1. *T. speciosissima*, R. Br. in Trans. Linn. Soc. x. 198, Prod. 388.** A stout erect glabrous shrub of 6 to 8 ft. Leaves cuneate-oblong or almost obovate, 5 to 10 in. long, mostly toothed in the upper part, tapering into a rather long petiole, coriaceous, pinniveined with the midrib prominent, a few rarely quite entire. Flowers crimson, in a dense ovoid or globular head or raceme of about 3 in. diameter. Involucral bracts coloured, ovate-lanceolate, the inner ones 2 to 3 in. long, the outer ones few and small, surrounded by a dense tuft of floral leaves like the stem ones but smaller and more entire. Bracts under the pairs of flowers very short. Pedicels thick, recurved,  $\frac{1}{2}$  to  $\frac{1}{2}$  in. long. Perianth glabrous nearly 1 in. long. Ovules 12 to 16. Fruit recurved, 3 to 4 in. long. Seeds 10 to 20, the nucleus broad, obliquely quadrate, the wing obliquely truncate,  $\frac{1}{4}$  to above  $\frac{1}{2}$  in. long.—Meissn. in DC. Prod. xiv. 446; *Embothrium speciosissimum*, Sm. Specim. Bot. Nov. Holl. i. 19, t. 7; Bot. Mag. t. 1128; *E. spathulatum*, Cav. Ic. iv. 60, t. 388; *E. speciosum*, Salisb. Parad. Lond. t. 111; *Hylogyne speciosa*, Knight, Prot. 126.

**N. S. Wales.** Port Jackson to the Blue Mountains, R. Brown, Sieber, n. 22, and many others, known by the name of *Warratau* or *Waratah*.

**2. *T. oreades*, F. Muell. Fragm. ii. 170.** A shrub with the habit of *T. speciosissima*, the branches slightly ferruginous-pubescent, the foliage glabrous. Leaves obovate-oblong or almost lanceolate, acute or obtuse, 4 to 8 in. long, tapering into a long petiole, entire or rarely with a few teeth at the end, usually glaucous underneath, the veins scarcely conspicuous except the midrib. Racemes short broad and dense as in *T. speciosissima*, but the glabrous involucre in one specimen coloured and obtuse with the inner bracts 1 in. long, in the other specimens all herbaceous rigid mucronate and the inner ones scarcely  $\frac{1}{2}$  in.



Melopeltis oreades T. M. 1900 524













long. Flowers of *T. speciosissima*. Fruit 3 in. long, besides the stipes and persistent style.

**Victoria.** Nangatta mountains and Canus river, Gipps' Land, *F. Mueller*.

3. **T. truncata**, *R. Br.* in *Trans. Linn. Soc.* x. 198, *Prod.* 389. A stout shrub of 6 to 8 ft., the young branches ferruginous-pubescent or villous, the foliage glabrous. Leaves mostly oblong-cuneate, but varying from oblong-linear to almost obovate, obtuse or with a small callous point, tapering into a short petiole, 2 to 3 or rarely 4 in. long, thick, the veins often impressed above and scarcely conspicuous underneath, the margins often recurved. Racemes short and dense, about 2 in. diameter. Involucral bracts ovate, clothed with appressed hairs, the inner ones 3 in. long, the outer ones shorter, more acuminate and sometimes with herbaceous tips. Pedicels glabrous, about ½ in. long. Perianth under 1 in. long, the broad part shorter in proportion than in *T. speciosissima*, tapering into a recurved neck at least as long. Fruit about 2 in. long, besides the persistent style. Seeds about 16.—Meissn. in DC. *Prod.* xiv. 446; Hook. f. Fl. Tasm. i. 327; *Embothrium truncatum*, Labill. Pl. Nov. Holl. i. 32, t. 44; *Hylogyne australis*, Knight, Prot. 127.

**Tasmania.** Mount Wellington, *P. Brown*; abundant in cool humid mountainous regions at an elevation of 2000 to 4000 ft., *J. D. Hooker*.

## 25. LOMATIA, R. Br.

(*Tricondylus*, *Salisb.*)

Flowers hermaphrodite. Perianth irregular, the tube oblique, open along the lower side, tapering at the top, the limb ovoid-globular, recurved, the laminae long cohering. Anthers ovate, sessile in the concave laminae. Hypogynous glands 3, broad and truncate, the fourth upper one deficient. Ovary on a long stipe, tapering into a long style dilated at the top into a flat oblique disk stigmatic in the centre; ovules several, laterally attached below the middle, amphitropous, imbricate upwards in 2 rows. Follicle coriaceous, opening almost flat. Seeds imbricate upwards, with a broad terminal nearly straight wing, surrounded by the marginal raphe.—Shrubs or trees. Leaves alternate, entire, toothed or pinnately divided, very variable on the same individual. Flowers pedicellate in pairs, in terminal or axillary simple or slightly branched racemes. Bracts under each pair usually small narrow and very deciduous or often entirely wanting. Perianths white or pale yellow, sometimes assuming at length a reddish tint.

The genus is also represented in the mountains of extratropical South America, but the Australian species appear to be all endemic. The structure and proportions of the parts of the flower and fruit are remarkably uniform in the Australian species, leaving little for their distinction besides the foliage which is eminently variable. The thin fragile pellicle or powdery substance interposed between the seeds in this genus and in *Telopea*, appears to be an epidermal production of the seed itself, but its real nature can scarcely be ascertained without observing it in a fresh state both before and after the maturity of the seed.

- Leaves pinnate with ovate petiolulate segments . . . . .
- Leaves undivided or once or twice pinnate, with sessile or decurrent segments usually reticulate and toothed.
- Leaves mostly undivided, ovate to lanceolate, acutely toothed, rarely pinnate . . . . .
- Leaves mostly undivided, linear-lanceolate, with callous serratures . . . . .
- Leaves mostly once twice or thrice pinnate . . . . .
- Leaves narrow, undivided, pinnatifid or pinnate, otherwise entire or rarely toothed at the end, rather thick and veinless.
- Leaves mostly pinnate, glabrous or nearly so. Racemes long and loose . . . . .
- Leaves mostly undivided, closely and densely tomentose underneath. Racemes short and dense . . . . .
1. *L. fraxinifolia*.  
2. *L. ilicifolia*.  
3. *L. longisolia*.  
4. *L. silifolia*.  
5. *L. tinctoria*.  
6. *L. polymorpha*.

**1. *L. fraxinifolia*, F. Muell. Herb.** A tall shrub or small tree, the branches and foliage glabrous and drying black, the inflorescence slightly ferruginous-tomentose. Leaves mostly pinnate; segments 3 to 7, ovate or ovate-lanceolate, acuminate, coarsely-toothed, contracted into a distinct petiolule, 2 to 3 or rarely 4 in. long, coriaceous and shining above, the veins not very conspicuous; occasionally the lower leaves are undivided, or on luxuriant shoots one or two of the segments are again divided. Racemes 6 to 8 in. long, solitary or several in a broad terminal panicle. Pedicels 3 or 4 lines long. Perianth glabrous, 4 to 5 lines long, the limb ovoid. Fruit only seen young.

**Queensland.** Rockingham Bay, Dallachy.

**2. *L. ilicifolia*, R. Br. in Trans. Linn. Soc. x. 200, Prod. 390, Prot. Nov. 33.** An erect branching shrub of several ft., growing out sometimes into a small tree, quite glabrous or the young shoots and inflorescence more or less ferruginous-pubescent. Leaves petiolate, ovate oblong or lanceolate, irregularly prickly-toothed or lobed, varying from 2 or 3 in. in some specimens, to twice that size in others, glabrous above and more or less reticulate, closely and shortly silky-pubescent underneath; the upper leaves often small and distant, and on barren shoots the leaves sometimes pinnate with numerous small sessile or decurrent lanceolate toothed segments. Racemes long and loose, simple or slightly branched. Pedicels  $\frac{1}{4}$  to  $\frac{1}{2}$  in. long. Perianth glabrous or pubescent with small appressed hairs, the tube 3 to  $3\frac{1}{2}$  lines long. Fruit 1 to  $1\frac{1}{2}$  in. long.—Meissn. in DC. Prod. xiv. 447; Bot. Mag. t. 4023; *Embothrium ilicifolium*, Poir. Dict. Suppl. ii. 551; *L. Fraseri*, R. Br. Prot. Nov. 34; Meissn. l.c.

**N. S. Wales.** Wombat Brush, *Fraser*, *A. Cunningham*; Berrima, *Wools*; New England, *C. Stuart*; Clarence river, *Beckler*, *Leunans*; Mount Lindsay, *W. Hill*; snowy mountains at the head of Macleay and Bellinger rivers, *C. Moore*; southward to Twofold Bay, *A. Cunningham*, *F. Mueller*.

**Victoria.** Port Phillip, *R. Brown*; Wilson's Promontory, *Baxter*; Dandenong ranges, Mount Disappointment, Seeler's Cove, Bunip Creek, Mount Aberdeen, Delatite Mountains, &c., *F. Mueller*.

The northern specimens are generally more ferruginous pubescent than the southern ones; some from New England have the leaves all small and ovate; in those from Clarence river they are frequently pinnate, and in one instance some are pinnatifid with

few lobes, and others pinnate with many segments on the same specimen; in Fraser's specimens they vary from slightly toothed to deeply pinnatifid.

**3. L. longifolia**, R. Br. in *Trans. Linn. Soc.* x. 200, *Prod.* 390. An erect shrub of 8 to 10 ft., glabrous or with a slight ferruginous pubescence on the young shoots and inflorescence. Leaves linear-lanceolate or rarely oblong-lanceolate, acuminate, bordered by distant serratures, tapering into a short petiole, mostly 4 to 8 in. long, not very prominently veined. Racemes axillary and terminal, shorter than the leaves or rarely longer. Perianth glabrous, 4 to 5 lines long. Fruit about 1 in. long.—Meissn. in DC. *Prod.* xiv. 447; Bot. Reg. t. 442; *Embothrium myricoides*, Gürtn. f. Fr. iii. 215, t. 218; *E. longisolum*, Poir. *Diet. Suppl.* ii. 551; *Tricondylus myricæfolius*, Knight, *Prot.* 122; *L. angustifolia*, Schnitzl. Ic. ii. 113? (name and fruit only).

**N. S. Wales.** Port Jackson to the Blue Mountains, *R. Brown*, Sieber, n. 16, *Fl. Mixt.* n. 473, and many others; Sydney woods, Paris Exhibition, 1855, *M'Arthur*, n. 177; Argyle County, *Backhouse*; Two-fold Bay, *L. Morton*.

**Victoria.** King river, Mitta-Mitta and Buffalo ranges, *F. Mueller*.

Var. *arborescens*. A small tree of 20 to 25 ft., with rather longer, more terminal racemes and flowers, smaller or shorter slender pedicels.—Sydney woods, Paris Exhibition, 1855, *M'Arthur*, n. 219.

**4. L. silaifolia**, R. Br. in *Trans. Linn. Soc.* x. 199, *Prod.* 389, *Prot. Nov.* 33. A shrub of 2 or 3 ft., glabrous or the young shoots and inflorescence minutely pubescent. Leaves mostly twice or thrice pinnate, rarely simply pinnate; segments sessile and decurrent, linear or lanceolate, usually deeply and sharply toothed, narrow or broad, long or short, the whole leaf usually 4 to 8 in. long and broad, or the lower ones larger, the reticulations obscure or prominent. Racemes terminal, long and loose, simple or branched, the flowers larger than in the preceding species. Pedicels  $\frac{1}{4}$  to  $\frac{1}{2}$  in., perianth 7 to 8 lines long.—Meissn. in DC. *Prod.* xiv. 448; Bot. Mag. t. 1272; *Embothrium silaifolium*, Sm. Specim. Bot. Nov. Holl. 23, t. 8; *E. herbaceum*, Cav. Ic. iv. 58; t. 384; *E. erithmifolium*, Sm. (Steud.); *Tricondylus silaifolius*, Knight, *Prot.* 122.

**Queensland.** Brisbane river, Moreton Bay, *F. Mueller*.

**N. S. Wales.** Port Jackson to the Blue Mountains, *R. Brown*, Sieber, n. 15, and others; New England, *C. Stuart*, *C. Moore*; Hastings river, *Fraser*.

Var. *induta*, F. Muell. Leaves silky-pubescent underneath, passing into the cut-leaved forms of *L. ilicifolia*.—Brisbane river, Moreton Bay, Leichhardt, *F. Mueller*.

Some specimens from Hastings river, *Belller*, with simply pinnate leaves and toothed segments may be a variety either of *L. silaifolia* or *L. ilicifolia*.

**5. L. tinctoria**, R. Br. in *Trans. Linn. Soc.* x. 199, *Prod.* 389. A small shrub, rarely exceeding 2 ft., and increasing by subterraneous runners so as to form large patches, glabrous or the young shoots inflorescence and underside of the leaves silky-pubescent. Leaves pinnate bipinnate or rarely undivided; segments linear, obtuse, entire or lobed, varying from under  $\frac{1}{2}$  in. to above 1 in. long, but rather regular in the same leaf, scarcely veined besides the midrib. Racemes terminal or in the upper axils, pedunculate, loose, 4 to 8 in. long. Pedicels

about  $\frac{1}{2}$  in., perianth about 5 lines long. Fruit from  $\frac{1}{2}$  to near 1 in. long.—Meissn. in DC. Prod. xiv. 448; Hook. f. Fl. Tasm. i. 328; Bot. Mag. t. 4110; *Embothrium tinctorium*, Labill. Pl. Nov. Holl. i. 31, t. 43; *Tricondylus tinctorius*, Knight, Prot. 122.

**Tasmania.** Port Dalrymple and Derwent river, *R. Brown*: abundant in sandy soil, ascending to 3000 ft., *J. D. Hooker*.

**6. L. polymorpha**, *R. Br.* in *Trans. Linn. Soc.* x. 200, *Prod.* 389. A tall slender shrub, the branches and inflorescence ferruginous or silky-tomentose. Leaves mostly oblong-linear or lanceolate, obtuse or acute, entire, tapering into a petiole, 1 or 2 in. long, rarely more or less pinnatifid, thick, smooth and veinless above, densely but closely tomentose underneath, the midrib prominent, the margins often nerve-like or recurved. Racemes terminal, short and dense. Pedicels 3 to 6 lines long. Perianth pubescent,  $\frac{1}{2}$  in. long.—Meissn. in DC. Prod. xiv. 448; Hook. f. Fl. Tasm. i. 327; *Embothrium tinctorium*, var. *Labill. Pl. Nov. Holl. i. 31, t. 42.*

**Tasmania.** Port de l'Esperance and Mount Wellington, *R. Brown*: abundant in the western and central alpine districts, *J. D. Hooker*.

## 26. CARDWELLIA, F. Muell.

Flowers hermaphrodite. Perianth somewhat irregular, the tube open along the lower side, tapering at the top and recurved under the obliquely globular limb. Anthers ovate, sessile in the concave lamina. Hypogynous glands 4. Ovary contracted into a short stipes; style elongated, dilated at the top into a lateral disk stigmatic in the centre; ovules several, laterally attached near the top and imbricate downwards in 2 rows. Fruit thick and woody, opening at length into a broad follicle. Seeds very flat, oblong, surrounded by a wing-like margin.—A tree. Leaves alternate, abruptly pinnate. Flowers in terminal racemes, in pairs, with the very short pedicels united. Bracts not seen.

The genus is limited to a single species endemic in Australia.

**1. C. sublimis**, *F. Muell. Fragm.* v. 24, 38, 73, and 152. A tree of 80 to 90 ft., the young branches and inflorescence minutely hoary-tomentose, the adult foliage glabrous. Leaves above 1 ft. long; leaflets 4 to 10, opposite or alternate, all on rather long petiolules, ovate or oblong, obtuse, coriaceous, veined, green above, pale glaucous or fulvous underneath, 3 to 8 in. long. Racemes several in a terminal panicle, sometimes shorter sometimes longer than the leaves. Pedicels exceedingly short. Perianth hoary-tomentose, the tube about  $\frac{1}{2}$  in. long. Hypogynous glands globular. Ovules 12 to 16. Fruit when unripe with the aspect of that of a *Aglomelum*, but one old one in Herb. F. Mueller has opened out into a broad orbicular follicle, 3 in. diameter. Seed about 3 in. long,  $\frac{3}{4}$  in. broad.

**Queensland.** Mountains about Rockingham Bay, *Dallachy*.









## 27. STENOCARPUS, R. Br.

(Agnostus, A. Cunn.)

Flowers hermaphrodite. Perianth slightly irregular, the tube opening along the lower side, the limb nearly globular and recurved, the segments at length separating. Anthers broad, sessile within the concave laminae, the connective not produced beyond the cells. Hypogynous glands united in a short semiannular disk or cup or almost obsolete. Ovary stipitate, tapering into a long style dilated at the top into a flat oblique disk, stigmatic in the centre; ovules several, laterally attached at or near the top, imbricate downwards in 2 rows. Fruit a follicle, usually narrow, coriaceous; seeds produced at the lower end into a membranous wing.—Trees. Leaves alternate or scattered, entire or deeply pinnatifid with few lobes. Peduncles terminal or in the upper axils, sometimes several in an umbel or short raceme, each bearing an umbel of pedicellate red or yellow flowers. Bracts none or falling off at a very early stage.

The genus extends to New Caledonia, the Australian species are however all endemic.

Leaves 6 in. to 1 ft. long. Perianths above 1 in. long, the pedicels radiating in a single row round the disk-like end of the peduncle

1. *S. sinuatus*.

Leaves under 6 in. Perianths  $\frac{1}{2}$  in. long or less, the pedicels irregularly crowded on the summit of the peduncle.

Ovary usually pubescent . . . . . 2. *S. salignus*.

Ovary quite glabrous . . . . . 3. *S. Cunninghamii*.

**1. *S. sinuatus*, Endl. Gen. Pl. Suppl. iv. 88.** A tree sometimes described as small and slender, sometimes said to attain 60 to 100 ft., glabrous or the inflorescence minutely tomentose. Leaves petiolate, either undivided oblong-lanceolate and 6 to 8 in. long, or pinnatifid and above 1 ft. long, with 1 to 4 oblong lobes on each side, mostly obtuse, quite glabrous but reddish underneath, pinniveined and minutely reticulate. Peduncles terminal, either 2 or more together in a general umbel, or several at some distance forming a short broad raceme, each peduncle 2 to 4 in. long, and bearing an umbel of 12 to 20 bright red flowers, the pedicels about  $\frac{1}{2}$  in. long, radiating in a single row round the disk-like dilated summit of the peduncle. Perianth tube 1 in. long or rather more, straight, tapering upwards, the limb recurved, globular, about 2 lines diameter. Ovary densely pubescent, on a glabrous stipe, with a rather thick glabrous style. Ovules 12 to 14.—Meissn. in DC. Prod. xiv, 451; *Agnostus sinuatus*, A. Cunn. in Loud. Hort. Brit. 580; *Stenocarpus Cunninghamii*, Hook. Bot. Mag. t. 4263 (copied into Fl. des. Serres. iii. 189, t. 7) not of R. Br.; Paxt. Mag. xiv. i. with a fig.

**Queensland.** Brisbane river, Moreton Bay, A. Cunningham, W. Hill; Araucaria ranges, Leichhardt; Queensland woods, London Exhibition, 1862, W. Hill, n. 17.

**N. S. Wales.** Richmond river, C. Moore, Fawcett; Tweed river, C. Moore.

**2. *S. salignus*, R. Br. in Trans. Linn. Soc. x. 202, Prod. 391.** A moderate-sized tree, glabrous or the inflorescence minutely pubescent.

Leaves in the typical form ovate-lanceolate or elliptical, acute acuminate or rarely obtuse, tapering into a short petiole, 2 to 4 in. long, varying from penniveined to triplinerved (the lower primary veins scarcely longer or much longer and thicker than the others), but the veins usually indistinct slightly prominent or almost immerses, a few leaves on young trees or barren branches larger and pinnatifid. Peduncles slender, terminal or in the upper axils, usually shorter than the leaves, bearing a single umbel of 10 to 20 flowers or in luxuriant specimens as many as 30 flowers. Pedicels  $\frac{1}{4}$  to  $\frac{1}{2}$  in. long, irregularly crowded on the summit of the peduncles. Perianth usually under  $\frac{1}{2}$  in. long. Ovary slightly silky-pubescent or nearly glabrous. Ovules 6 to 8, not so closely imbricate nor so narrow and compressed as in *S. sinuatus*.—Meissn. in DC. Prod. 451; Bot. Reg. t. 441; *Hakea rubricaulis*, Colla, Hort. Ripul. App. i. 114, t. 3; *Embothrium rubricaulis*, Giord. Obs. 1837 (Meissn.); *Stenocarpus acacioides*, F. Muell. Fragm. i. 135.

**Queensland.** Warwick, Nernst.

**N. S. Wales.** Grose river, R. Brown; Blue Mountains, A. and R. Cunningham; Tweed river, C. Moore; Illawarra, A. Cunningham, Shepherd; Sydney woods, Paris Exhibition, 1855, M'Arthur, n. 187. Known under the name of "Silky Oak."

Var. *Moorei*. Leaves broader and usually more distinctly tripli- or quintupli-nerved, the ovary minutely pubescent.—*S. Moorei*, F. Muell. Fragm. i. 134, v. 154.—Rockingham Bay, Dallachy; Mount Lindsay, W. Hill; Illawarra, C. Moore; Mount Warning, C. Moore (with a few leaves deeply pinnatifid with 3 or 5 long narrow lobes).

Var. *concolor*. Leaves more prominently tripli- or rarely quintupli-nerved, the reticulations also more distinct. Flowers rather larger. Ovary glabrous or nearly so.—*S. concolor*, F. Muell. Fragm. iii. 147, v. 154.—Bread Sound and near Maryborough, Bowman.

3. **S. Cunninghamii**, R. Br. Prot. Nov. 34. A tall bushy shrub or small tree, glabrous or the inflorescence slightly pubescent, the specimens closely resembling those of *S. salignus* in which the leaves are rather narrow, thick and obscurely veined. Leaves oblong-lanceolate, obtuse or acuminate, varying in breadth, about 2 to 4 in. long, tapering into a short petiole, faintly tripli- or quintupli-nerved, the smaller veins rarely visible. Flowers precisely as in *S. salignus*, except that the ovary appears to be constantly quite glabrous.—Meissn. in DC. Prod. xiv. 451.

**N. Australia.** Vansittart's Bay, N.W. coast, A. Cunningham (with small flowers and a slightly pubescent inflorescence); sources of the Rooper river, F. Müller (with small flowers and a nearly glabrous inflorescence); Liverpool river, Cudell's Expedition (with rather larger flowers and the inflorescence quite glabrous). The whole should probably be considered as varieties of *S. salignus*.

**TRIBE 7. BANKSIEÆ.**—Ovules 2, collateral. Seeds separated by a hard or membranous, usually bifid, sometimes double plate, rarely wanting. Flowers in dense spikes or cones with closely imbricate persistent bracts within or below the spike.

The singular plate intervening between the two seeds in this tribe has been explained by Brown to consist of the outer coating of one side of each seed, separating from the inner coatings as they advance towards maturity, the two becoming usually consolidated opposite the nuclei, remaining distinct opposite the seed wings. This plate is







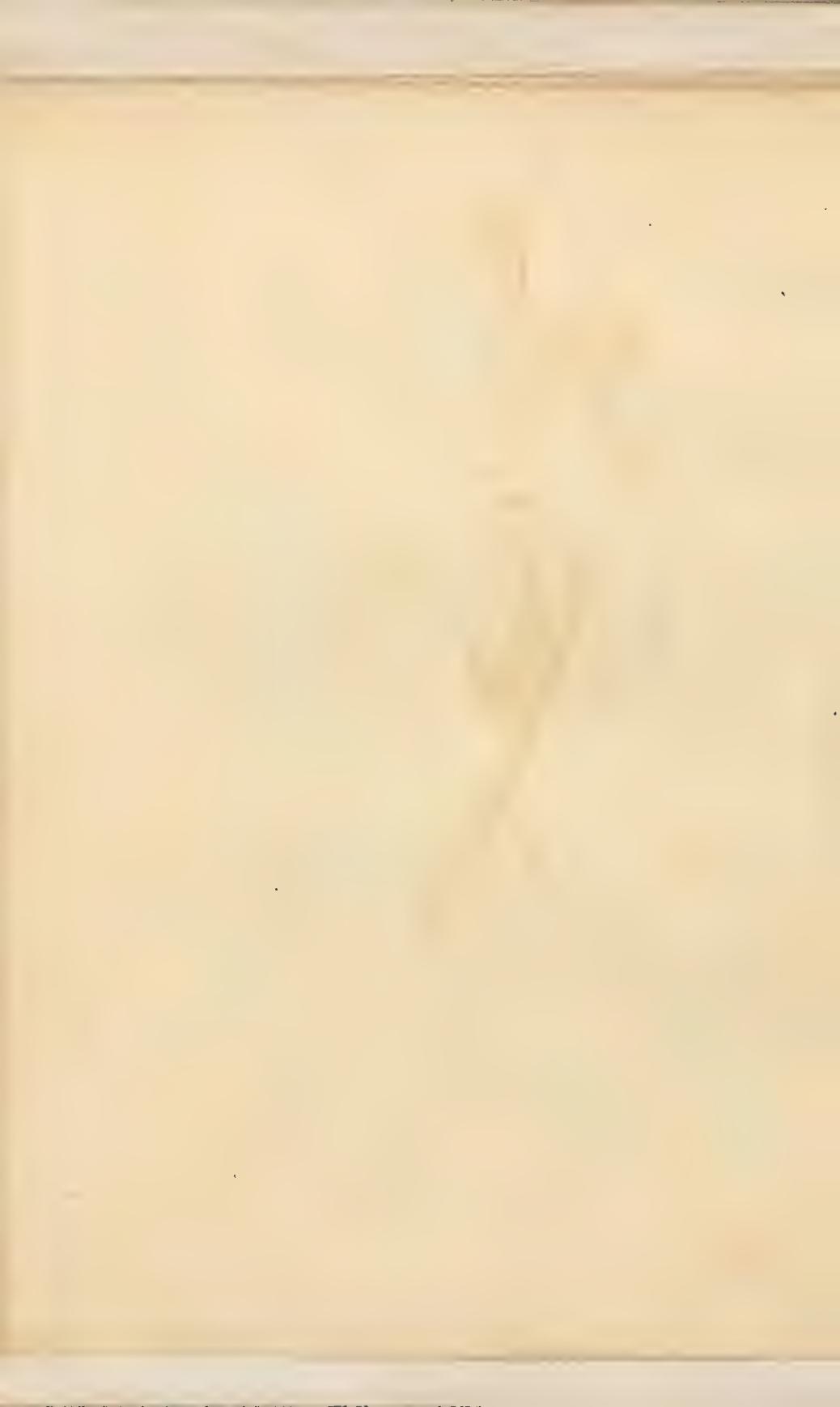












entirely free from the walls of the pericarp, except at the point of attachment of the seed, forming a portion of the latter, not of the former, and has therefore no title to the name of a dissepiment, real or spurious, still given to it in systematic works, even in the *Prodromus*.

### 28. BANKSIA, Linn. f.

Flowers hermaphrodite. Perianth regular or nearly so, straight or curved, the slender tube opening equally or along the lower side only, the limb ovoid oblong or linear, the laminae remaining long coherent, or rarely separating as the tube opens. Anthers narrow, sessile in the concave laminae, the connective thick, usually very shortly produced beyond the cells. Hypogynous scales 4, very thin and membranous (rarely deficient?). Ovary very small and sessile; style usually longer than the perianth, rigid, curved and protruding from the slit in the perianth-tube until the end is set free by the separation of the laminae, and then either straightened or remaining hooked or curved, rarely straight from the first and not exceeding the perianth; the stigmatic end on a level with the anthers, of a different texture but smooth, or striate and furrowed, continuous with the style or with a prominent rim at the base, the real stigma small and terminal; ovules 2, collaterally attached about the middle. Fruit a compressed capsule, opening at the broad end (or rather outer margin, for the scar of the style is lateral) in two hard often woody horizontal valves. Seeds usually 2, compressed, with a terminal membranous wing broad and rounded like the valves, the seeds separated by a plate of the same shape (the consolidated outer integuments of the inner side of the two seeds) free from the ripe seeds, simple (completely consolidated) between the nuclei, double (remaining distinct) between the wings.—Trees or shrubs. Leaves alternate or rarely verticillate or nearly so, usually narrow, entire toothed pinnatifid or pinnate, with numerous (rarely few) short teeth lobes or segments, the primary veins numerous and transverse, rarely inconspicuous or irregular and the minute reticulations numerous on the under surface, with a minute tomentum rarely wanting in the areole, and sometimes white and covering the whole under surface, the upper surface almost always glabrous and smooth. Flowers sessile in pairs, in dense terminal cylindrical oblong or globular spikes, either terminal and sessile above the last leaves or rarely lateral or on short lateral branches; each pair of flowers subtended by one bract and two lateral rather smaller bracteoles, both bracts and bracteoles densely woolly-villous on the sides, the tips glabrous tomentose or villous, either clavate and obtuse or truncate, or shortly acuminate, always densely imbricate in parallel spiral or rarely vertical lines. Perianth-tube very slender and entire within the bracts, ultimately splitting beyond them. In fruit the bracts and bracteoles become consolidated with the rhachis into a thick woody cone, either covered with the withered remains of the perianths amongst which the capsules are entirely concealed, or, where the flowers are wholly deciduous, the valves of the capsules protrude more or less beyond the bracts, the

lower indehiscent portion containing the nuclei of the seeds remaining imbedded among the bracts. The proportion of perfect capsules is usually very small in relation to the number of flowers, of which there are often from 500 to above 1000 in the same spike.

The genus is endemic in Australia, and the greater number of species are Western; two only of the Eastern species penetrate into the tropics, besides one which is exclusively tropical, if it be really more than a variety of the most widely diffused of the Eastern species.

SECT. 1. *Oncostylis*.—Leaves linear or rarely lanceolate, with revolute margins or nearly flat but very white underneath, entire denticulate or pinnate with small numerous regular segments. Style remaining hooked after the perianth limb has opened, the stigmatic end very small.

Perianth-tube villous, less than half as long as the style, the limb glabrous. Leaves small, entire. Western species.

Perianth-tube about 4 lines long. Leaves incurved or erect,  $\frac{1}{2}$  to  $\frac{1}{2}$  in. long . . . . .

Perianth-tube about 3 lines long. Leaves spreading or reflexed, not exceeding  $\frac{1}{2}$  in. . . . .

Perianth-tube more than half as long as the style, silky as well as the limb.

Leaves linear with closely revolute entire margins and not truncate at the end. Western species.

Leaves mostly short. Perianth under 1 in. long. Bracts with glabrous tips . . . . .

Leaves mostly long. Perianth above 1 in. long. Bracts entirely woolly-villous . . . . .

Leaves linear, truncate or notched at the end and often denticulate, especially near the end.

Western species, leaves long.

Leaves (2 to 4 in.) very narrow, with closely revolute entire margins. Bracts villous to the end . . . . .

Leaves (2 to 4 in.) with revolute or recurved margins, entire or denticulate towards the end. Bracts with glabrous tips . . . . .

Leaves (4 to 8 in.) more open, showing the tomentose under surface. Bracts tomentose at the end . . . . .

Eastern species.

Leaves (about  $\frac{1}{2}$  in.) very narrow with closely revolute entire margins . . . . .

Leaves ( $1\frac{1}{2}$  to 3 in.) narrow-linear with closely revolute entire or denticulate margins . . . . .

Leaves ( $1\frac{1}{2}$  to 3 in.) linear, more open, showing the white under surface, denticulate to the base or rarely entire . . . . .

Leaves mostly verticillate, oblong-lanceolate or broadly linear, entire or rarely toothed at the end, white underneath.

Western species . . . . .

Leaves pinnate with numerous small regular contiguous but distinct segments.

Leaf-segments broad, triangular. Spikes small, globular or ovoid . . . . .

Leaf-segments narrow, falcate. Spikes large, oblong or cylindrical . . . . .

1. *B. pulchella*.

2. *B. Meissneri*.

3. *B. nutans*.

4. *B. sphærocarpa*.

5. *B. tricuspidis*.

6. *B. occidentalis*.

7. *B. littoralis*.

8. *B. ericifolia*.

9. *B. spinulosa*.

10. *B. collina*.

11. *B. verticillata*.

12. *B. dryandroidea*.

13. *B. Brownii*.

SECT. 2. *Cyrtostylis*.—Leaves flat or undulate, the margins not revolute, toothed, pinnatifid or pinnate. Style arched or nearly straight and turned upwards after flowering, not hooked, the stigmatic end small, not striate. Western species.

Perianth obtuse or acute, not aristate.

Leaves narrow, regularly serrate, usually white underneath.

Spikes narrow. Perianth glabrous, under  $\frac{3}{4}$  in. long . . . . .

14. *B. attenuata*.

- Spikes broad. Perianth 1 in. long, the tube villous, the limb at length glabrous . . . . . 15. *B. media*.  
 Leaves large, on long petioles, irregularly toothed or lobed.  
 Tree. Outer bracts short . . . . . 16. *B. Solandri*.  
 Low prostrate shrubs. Outer bracts linear-subulate.  
 Leaves closely surrounding the spike and not along the prostrate stem . . . . . 17. *B. Goodii*.  
 Leaves erect along the prostrate stem, white underneath, none round the spike . . . . . 18. *B. petiolaris*.  
 Leaves large, on long petioles, deeply and irregularly pinnatifid.  
 Low prostrate shrubs. Spikes oblong.  
 Perianth 1 in. long, the limb hirsute with loose usually persistent hairs . . . . . 19. *B. repens*.  
 Perianth scarcely  $\frac{3}{4}$  in. long, the limb clothed with intricate loose ferruginous very deciduous hairs . . . . . 20. *B. prostrata*.  
 Leaves large, pinnate, with triangular distinct but contiguous segments. Spikes cylindrical . . . . . 21. *B. grandis*.  
 Perianth acuminate with long awn-like points. Leaves nearly sessile, not very large, irregularly toothed or lobed.  
 Spikes 3 to 4 in. long, rather narrow. Bracts with glabrous tips 22. *B. quercifolia*.  
 Spikes 4 to 8 in. long, very thick. Bracts villous at the end . . . . . 23. *B. Baueri*.

**Sect. 3. Eubanksia.**—Leaves linear-lanceolate, oblong or cuneate, with recurved or revolute, entire or dentate margins, white underneath. Style at first curved, straight and very spreading or reflexed after the perianth limb has opened, the stigmatic end small, not striate. Eastern or tropical species.

- Leaves (mostly 1 to 2 in.) entire or rarely toothed, reticulate underneath, without any or with few and irregular primary transverse veins . . . . . 24. *B. marginata*.  
 Leaves (mostly 3 to 6 in.) entire or rarely toothed, with transverse primary veins underneath, usually numerous but not much more prominent than the reticulations and white like them . . . . . 25. *B. integrifolia*.  
 Leaves (mostly 4 to 8 in.) broad, coarsely toothed, the transverse primary veins prominent underneath and not so white as the reticulations . . . . . 26. *B. dentata*.  
 (*B. latifolia*, has nearly the flowers and style of *Eubanksia*, but flat leaves not white underneath).

**Sect. 4. Orthostylis.**—Leaves flat or undulate (irregularly in *B. Caleyi* and *B. coccinea*), serrate, pinnatifid or pinnate, with short lvs or segments. Perianth usually straight. Style, after the perianth limb has opened, curved upwards near the base, then straight and erect, the stigmatic end prominently angled and furrowed or striate.

Eastern species.

- Leaves 2 to 3 in. long, broad, irregularly toothed. Style end of *Eubanksia* . . . . . 27. *B. latifolia*.  
 Leaves 3 to 6 in. long,  $\frac{1}{2}$  to 1 in. broad, regularly serrate. Style-end thickened at the base.  
 Style end cylindrical . . . . . 28. *B. serrata*.  
 Style-end ovoid, very short . . . . . 29. *B. cœmula*.  
 Leaves 2 to 4 in. long,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. broad, regularly serrate. Style-end oblong . . . . . 30. *B. ornata*.  
 Western species.  
 Perianth villous.  
 Leaves  $\frac{3}{4}$  in. broad or more, very shortly sinuate, toothed.  
 Leaves  $1\frac{1}{2}$  to  $2\frac{1}{2}$  in. long, very broad, often cordate. Perianths, before opening, in double-straight rows alternating with double rows of styles . . . . . 31. *B. coccinea*.

Leaves $1\frac{1}{2}$ to $2\frac{1}{2}$ in. long. Spikes long, the perianths and styles alternating in single rows . . . . .	32. <i>B. sceptrum</i> .
Leaves 6 in. to 1 ft. long . . . . .	33. <i>B. Menziesii</i> .
Leaves under $\frac{1}{2}$ in. broad, regularly serrate, the veins inconspicuous underneath.	
Leaves 2 to 4 in. long. Spikes globular. Style-end small and slender . . . . .	34. <i>B. laxigata</i> .
Leaves 4 to 8 in. long. Spikes oblong. Style-end long, with a thickened base . . . . .	35. <i>B. Hookeriana</i> .
Leaves deeply and regularly serrate or lobed, the transverse veins connivent in each lobe. Style end stipitate above its thickened base . . . . .	
Leaf-lobes short and broad, not reaching halfway to the midrib . . . . .	36. <i>B. prionotes</i> .
Leaf-lobes triangular, acuminate, reaching more than half-way to the midrib . . . . .	37. <i>B. Victoriae</i> .
Leaves pinnate with contiguous broad acute segments. Style hairy.	
Spikes oblong. Perianth-limb obtuse. Leaves often 1 ft. long . . . . .	38. <i>B. sp. cisa</i> .
Spikes globular. Perianth-limb acute. Leaves under 6 in. long . . . . .	39. <i>B. Baxteri</i> .
Perianth glabrous.	
Leaves 1 to $1\frac{1}{2}$ in. long, oblong, truncate, sinuate-toothed.	
Spikes oblong cylindrical . . . . .	40. <i>B. marcescens</i> .
Leaves $1\frac{1}{2}$ to 3 in. long, obovate-oblong, toothed. Spikes large, nearly globular . . . . .	41. <i>B. Lemanniana</i> .
Leaves 3 to 6 in. long, narrow, sinuate and prickly-toothed. Spikes nearly globular. Perianth-limb half as long as the tube . . . . .	42. <i>B. Caleyi</i> .
Leaves 2 to 4 in. long, regularly serrate. Perianth-limb not half as long as the tube . . . . .	43. <i>B. Lindleyana</i> .
Leaves 6 in. to 1 ft. long or more, with numerous regular triangular lobes or segments.	
Leaves lobed only . . . . .	44. <i>B. elegans</i> .
Leaves divided to the midrib . . . . .	45. <i>B. Candolleana</i> .

SECT. 5. *Isostylis*.—Spikes reduced to depressed globular heads. Perianths straight, the limb opening as soon as the tube and style straight as in most Dryandriæ, but the outer bracts few as in Banksia.

Leaves 1 to 3 in. long, obovate-oblong or cuneate, undulate and prickly-toothed . . . . . 46. *B. ilicifolia*.

*B. Huogelii*, Br., *B. longijolia*, Desf., *B. mimosoides*, Don, *B. rabra*, Don, and *B. virens*, Don, are names only of plants which, if true Banksia, belong probably to some of the species above enumerated.

SECT. 1. *Oncostylis*.—Leaves linear or rarely lanceolate, with revolute margins or nearly flat but very white underneath, entire dentate or pinnate with small numerous regular segments. Style remaining hooked after the perianth-limb has opened, the stigmatic end very small and not distinctly furrowed.

1. **B. pulchella**, R. Br. in *Trans. Linn. Soc. x.* 202, *Prod.* 391. A shrub with villous or tomentose branches. Leaves crowded, erect or incurved, linear, sometimes very narrow or almost terete, obtuse or almost acute, the margins entire and closely revolute, narrowly grooved or more broadly channelled underneath, the midrib not prominent,  $\frac{1}{4}$

to  $\frac{1}{2}$  in. long. Spikes ovoid-globular, the rhachis 1 to  $1\frac{1}{2}$  in. long. Bracts villous. Perianth-tube densely villous, about 4 lines long, the limb acute, glabrous. Ovary villous. Style nearly 1 in. long, remaining hooked, with a very small broad stigmatic end. Fruiting cone globular, about 2 in. diameter, the capsules usually very numerous and closely packed, very flat, projecting but slightly, the margin becoming glabrous, nearly 1 in. broad when perfect.—Meissn. in Pl. Preiss. ii. 264, and in DC. Prod. xiv. 452.

**W. Australia.** Lucky Bay, R. Brown, and probably from the same neighbourhood, Baxter, Drummond, n. 24, and 2nd coll. n. 338.

**2. B. Meissneri, Lehm.**; Meissn. in Pl. Preiss. i. 582, and in DC. Prod. xiv. 452. A spreading shrub of 2 or 3 ft., or sometimes low and straggling, the branches slightly hoary. Leaves linear, rather crowded, very spreading or reflexed, obtuse or scarcely acute, with revolute margins, singly grooved or channelled underneath, not above  $\frac{1}{4}$  in. long and thicker than in *B. pulchella*. Spikes ovoid and flowers smaller than in that species. Perianth-tube loosely villous, scarcely 3 lines long, the glabrous limb very small. Ovary glabrous? Style about  $\frac{3}{4}$  in. long, remaining hooked with the small depressed stigmatic end of *B. pulchella*. Fruiting cone not seen.

**W. Australia.** Between Swan river and King George's Sound, Drummond, n. 109, 2nd coll. n. 282, Preiss, n. 488, Harvey; near Arthur, Oldfield; Beaufort and Gorlon plains, Marwell; and with more erect leaves, Phillips river to Esperance Bay, Marwell. F. Muell. thinks that this is a variety only of *B. pulchella*, with small thick spreading leaves. The ovary appeared to me to be glabrous, but that character may require further confirmation. Both species differ from all other *Banksiae* in their small perianth, very short in proportion to the style.

**3. B. nutans, R. Br.** in Trans. Linn. Soc. x. 203, Prod. 391. A shrub, glabrous or nearly so except the inflorescence. Leaves crowded, very narrow-linear, almost terete, very shortly mucronate, the margins closely revolute and entire, singly grooved underneath,  $\frac{1}{2}$  to 1 in. long. Spikes globular or shortly oblong, erect or nodding, the rhachis from under 1 to near 2 in. long. Bracts with small glabrous tips. Perianth-tube  $\frac{3}{4}$  in. long, silky-villous as well as the limb. Ovary glabrous. Style remaining hooked, with a short thick stigmatic end not distinctly furrowed. Fruiting cone globular, 2 to 4 in. diameter; capsules very thick and scarcely protruding, the end in some specimens above 1 in. broad and nearly 1 in. thick, smooth and at first raised along the suture, at length depressed the thick almost turgid backs of the valves very rugose; in some specimens the capsules smaller and smoother, but perhaps not full-grown.—Meissn. in Pl. Preiss. i. 581, and in DC. Prod. xiv. 453; F. Muell. Fragm. iv. 108.

**W. Australia.** Lucky Bay, R. Brown; King George's Sound or adjoining districts, Baxter, Drummond, n. 168, 3rd coll. n. 281, Oldfield, Marwell. Meissner describes the capsules as somewhat tomentose all over and not turgid on the top; but he had probably either a mismatched fruit or a distinct variety from any I have seen, for I have always found the capsules perfectly glabrous, and more deserving the character of turgid at the top than any other species.

**4. *B. sphærocarpa***, R. Br. in *Trans. Linn. Soc.* x. 203, *Prod.* 391. A shrub of 3 or 4 ft., minutely silvery or hoary-tomentose. Leaves linear, obtuse or scarcely mucronate, with closely revolute entire margins, under 1 in. long in the typical specimens, in others 2 to 3 in. long. Spikes globular or nearly so, 2 to 3 in. diameter. Perianth silky, varying from a little above 1 in. to fully 1½ in. long, the limb narrow, obtuse. Style longer than the perianth, hooked, with a small cylindrical stigmatic end. Fruiting cone globular, dense; capsules slightly prominent, glabrous, thick, with a prominent ridge at the suture, nearly 1 in. broad when perfect.—Meissn. in *Pl. Preiss.* i. 581, and in DC. *Prod.* xiv. 452; *B. pinifolia*, Meissn. in DC. *Prod.* xiv. 453.

**W. Australia.** King George's Sound, R. Brown, Baxter, and others, and thence to Swan river, Drummond, n. 99, 100, 1st coll. n. 648, 649, 2nd coll. n. 336, Preiss, n. 486, 487, 494, 497, and others; Murchison river, Oldfield; between Moore and Murchison rivers, Drummond, 6th coll. n. 199.

Some of the northern specimens, which constitute the *B. pinifolia*, have larger flower-heads and flowers and longer leaves, and a fruit of Drummond's which, from his notes, may belong to this *B. pinifolia* is also much larger, with more prominent and thicker capsules. Other specimens from the same district have precisely the flowers of the common form. In some specimens the bracts have conical tomentose tips, in others they are quite flat. It is possible therefore that two species may be here confounded, but the specimens are insufficient for their distinction.

Var. *glabrescens*, Meissn. Flower-heads and flowers smaller, not so villous, the fulvous hairs of the bracts not so prominent.—W. Australia, Drummond, 2nd coll. n. 337.

Var. *latifolia*, F. Muell. Leaves short, 1 to 1½ lines broad. Flowers large, silky-villous with long rather loose hairs.—Perongerup Range, Maxwell.

**5. *B. tricuspis***, Meissn. in *Hook. Kew Journ.* vii. 118, and in DC. *Prod.* xiv. 453. Branches rather slender, glabrous or very slightly hoary. Leaves narrow-linear, truncate or almost notched, with a small callous point, the margins entire and closely revolute, 2 to 4 in. long. Spikes oblong-cylindrical, 5 to 6 in. long. Bracts obtuse, fulvous-villous. Perianths silky-villous but all withered and revolute in our specimens. Style above 1½ in. long, hooked, with a very small ovoid stigmatic end. Fruiting cone with very closely imbricate obtuse bracts; capsules very prominent, not thick, becoming glabrous, 9 to 10 lines broad.

**W. Australia.** Mount Lesueur and Gardner's Range, Drummond, 6th coll. n. 205.

**6. *B. occidentalis***, R. Br. in *Trans. Linn. Soc.* x. 204, *Prod.* 392. An erect shrub of 4 or 5 ft., the branches glabrous or minutely hoary. Leaves linear, truncate notched or 3-toothed at the end, otherwise entire or with a few small teeth towards the end, the margins recurved only, showing the white under surface and prominent midrib, 2 to 4 in. long. Spikes from ovoid and 3 in. to cylindrical and twice as long. Bracts with small glabrous tips. Perianth silky-villous, about ¾ in. long, the limb narrow. Ovary villous; style about 1 in. long, hooked, the stigmatic end scarcely distinct. Fruiting cone tomentose with the closely packed bracts; capsules prominent, not very thick, rounded, tomentose-villous, becoming glabrous at the suture, about ¾ in. broad.

—Meissn. in Pl. Preiss. i. 582, and in DC. Prod. xiv. 454, Bot. Mag. t. 3535; Lindl. and Paxt. Mag. i. t. 35, copied into Flora des Serres vi. 636, and into Lem. Fl. Jard. t. 119.

**W. Australia.** King George's Sound and adjoining districts, R. Brown, Baxter, Drummond, 3rd coll. n. 283, Preiss, n. 491, and others.

7. **B. littoralis**, R. Br. in Trans. Linn. Soc. x. 204, Prod. 392. A tree of 20 to 40 ft., the branches closely tomentose. Leaves scattered or irregularly whorled, linear, broadly and distantly serrate or rarely entire, tapering into a petiole, 4 to 8 in. long, the margins recurved or nearly flat, the under surface hoary-tomentose or white. Spikes oblong or cylindrical, 6 to 10 in. long. Bracts truncate and tomentose at the end. Perianth silky, nearly 1 in. long. Style rather longer than the perianth, remaining hooked, with a very small ovoid stigmatic end. Fruiting cones tomentose with the closely packed bracts after the perianths have fallen away; capsules shortly protruding, rounded, not thick, tomentose,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. broad.—Meissn. in Pl. Preiss. i. 583, and in DC. Prod. xiv. 454.

**W. Australia.** King George's Sound and adjoining districts, R. Brown, Fraser, Drummond, n. 109, 1st coll. n. 647, Preiss, n. 479, 496, Oldfield, Maxwell, F. Mueller. Very near in many respects to the eastern *B. collina*, but at once distinguished by the long leaves.

8. **B. ericifolia**, Linn. f. Suppl. 127. A tall shrub or small tree of 12 to 14 ft., glabrous except the inflorescence. Leaves crowded, narrow-linear, truncate or notched at the end and sometimes with an intermediate point, otherwise entire with closely revolute margins, rarely exceeding  $\frac{1}{2}$  in. Spikes cylindrical, 6 to 10 in. long. Bracts with broad shortly acuminate silky-pubescent tips. Perianth yellow, silky, the tube about  $\frac{3}{4}$  in. long, the limb ovoid. Style about 1 in. long, hooked, with a very short thick stigmatic end. Fruiting cones long and cylindrical. Capsules scarcely protruding, villous but often becoming glabrous, the flat top  $\frac{3}{4}$  to 1 in. broad and 4 or 5 lines thick.—R. Br. in Trans. Linn. Soc. x. 203, Prod. 391; Meissn. in DC. Prod. xiv. 453; Cav. Ic. vi. t. 538; Andr. Bot. Rep. t. 156; Bot. Mag. t. 788; Baill. Hist. Pl. ii. 393, f. 227 to 229.

**N. S. Wales.** Port Jackson, R. Brown, Sieber, n. 7, and many others; Hastings river, Beckler.

9. **B. spinulosa**, Sm. Specim. Bot. N. Holl. 13, t. 4. A tall shrub, glabrous or the young branches minutely pubescent. Leaves narrow-linear, notched at the end with a prominent point in the notch and often bordered towards the end with 2 or 3 small teeth on each side, otherwise entire, with revolute margins and the midrib prominent underneath, 1 $\frac{1}{2}$  to 3 in. long. Spikes ovoid and 2 to 3 in. long, or rarely cylindrical and twice as long. Bracts with broad shortly acuminate silky-pubescent tips. Flowers yellow, larger than in *B. ericifolia*. Perianth silky, the tube nearly 1 in. long. Style 1 $\frac{1}{4}$  to 1 $\frac{1}{2}$  in. long, often purple, with a very short stigmatic end not thicker than

the style. Fruiting cone cylindrical. Capsules scarcely protruding, glabrous, thick, smooth.—R. Br. in *Trans. Linn. Soc.* x. 203, Prod. 392; Meissn. in DC. Prod. xiv. 453; Cav. Ic. t. 537; Andr. Bot. Rep. t. 457; *B. denticulata*, Dum. Cours. (Meissn.).

**N. S. Wales.** Port Jackson, *R. Brown*, *Sieber*, n. 1, *Woolls*, and many others; near Richmond, *Wilhelmi*; southward to Twofold Bay, *F. Mueller*.

10. **B. collina**, *R. Br. in Trans. Linn. Soc.* x. 204, *Prod.* 392. A tall erect shrub attaining 8 to 12 ft., the young branches tomentose or villous. Leaves linear, much broader than in *B. spinulosa*, and always showing the white under surface, the margins only slightly recurved, more or less denticulate or rarely quite entire, 1½ to 3 in. long. Spikes oblong or cylindrical, 3 to 6 in. long. Bracts with broad flat or scarcely acuminate ends. Perianths silky, the tube above 1 in. long, the limb narrow-ovoid. Style longer than the perianth, hooked, with a very small stigmatic end. Fruiting cone cylindrical like that of *B. ericifolia* or longer. Capsules thick and scarcely protruding as in that species but quite glabrous.—Meissn. in DC. Prod. xiv. 454; *B. ledifolia*, A. Cunn. Herb.; *B. Cunninghamii*, Sieb. in Spreng. Syst. Cur. Post. 47, and in Roem. and Schult. Syst. iii. Mant. 289; R. Br. Prot. Nov. 35; Meissn. in DC. Prod. xiv. 454; Reich. Iconogr. Exot. t. 81; *B. littoralis*, Lindl. Bot. Reg. t. 1363; Grah. in Bot. Mag. t. 3060, not of R. Br.; *B. pri-onophylla*, F. Muell. 1st Gen. Rep. 17; *B. marginata* var. *macrostachya*, Hort. Petrop.

**Queensland.** Glasshouses, Moreton Bay, *C. Moore*.

**N. S. Wales.** Hunter's river, *Calycy*; Blue Mountains? *Sieber*, n. 6; western descent of the Blue Mountains, *A. Cunningham*; New England, *C. Stuart*; Richmond, Clarence and Hastings rivers, *Beckler*; Sydney wood, Paris Exhibition, 1855, *M'Arthur*, n. 215.

**Victoria.** Wilson's Promontory, *Baxter*; Sealer's Cove and towards Mount Ararat, *F. Mueller*; Upper Yarra river, *C. Walter*.

When the leaves are small and rather broad, they are somewhat like those of *B. marginata*, but the species is readily distinguished by the large flowers, hooked style and thick capsules.

11. **B. verticillata**, *R. Br. in Trans. Linn. Soc.* x. 207, *Prod.* 394. A small tree, the young branches tomentose and sometimes villous. Leaves in whorls of 4 to 6 sometimes irregular or broken on luxuriant branches, shortly petiolate, oblong-lanceolate or broadly linear, with recurved margins, white underneath, those of the flowering stems 1½ to 3 in. long, obtuse, entire or slightly toothed, but in some specimens without flowers (from young trees?) longer, narrower and more or less serrate. Spikes oblong-cylindrical, 4 to 8 in. long. Bracts truncate or very shortly acuminate with woolly-villous ends. Perianth yellow, silky, nearly 1 in. long. Style scarcely longer, hooked, with a very small stigmatic end. Fruiting cones long and narrow, the perianths deciduous leaving the closely packed bracts in hoary areolæ, with a more glabrous centre, or with slightly protruding flat capsules, ½ to ¾ in. broad, the valves not thickened.—Meissn. in Pl. Preiss. i. 583, and in DC. Prod. xiv. 457; Hook. Exot. Fl. t. 96.

**W. Australia.** King George's Sound, *R. Brown*, *Baxter*, *Drummond*, n. 167 (with smaller flowers), 4th coll. n. 304, *Preiss*, n. 493, 495 (the latter a barren specimen with denticulate leaves).

12. **B. dryandrodes**, *Buxt.* in *Sw. Fl. Austral.* t. 56. A shrub of 2 or 3 ft., with very spreading tomentose branches. Leaves sessile, 3 to 6 in. long, flexuose, divided nearly or quite to the midrib into numerous contiguous triangular lobes or segments, the largest of which are 3 to 4 lines long and broad, thick, with revolute margins, white or ferruginous-tomentose underneath. Spikes globular or rarely ovoid, about  $1\frac{1}{2}$  in. diameter, shortly pedunculate, more lateral than in most species. Perianth-tube silky-villous, about  $\frac{1}{2}$  in. long, the limb hirsute with longer deciduous hairs, about 1 line long, acute. Style scarcely longer than the perianth, remaining hooked, with a very small almost capitate stigmatic end. Fruiting cone globular, about 2 in. diameter. Capsules protruding, rounded at the end, rather flat,  $\frac{3}{4}$  in. broad, at first villous, at length glabrous.—*R. Br. Prot.* Nov. 36; Meissn. in *Pl. Preiss.* i. 588, and in *DC. Prod.* xiv. 465.

**W. Australia.** Towards Cape Riche, *Drummond*, 3rd coll. n. 287, *Preiss*, n. 490, *Maxwell*; Mount Gardner, *Baxter*; sand plains, Kalgan river, *Oldfield*.

13. **B. Brownii**, *Buxt.* in *R. Br. Prot.* Nov. 37. A small tree of 10 to 20 ft. Leaves very shortly petiolate, 3 to 5 in. long, divided to the midrib into very numerous lanceolate falcate regular segments, the largest scarcely above 3 lines long, with recurved margins, white underneath. Spikes oblong-cylindrical, very thick, 6 to 8 in. long. Perianth silky-villous, about 1 in. long, the limb small narrow and acute. Style longer than the perianth, hooked, with a very small stigmatic end. Fruiting cone oblong or cylindrical, thick. Capsules protruding, rounded, not thick, shortly villous or at length glabrous, about  $\frac{3}{4}$  in. broad.—Meissn. in *Pl. Preiss.* i. 588, and in *DC. Prod.* xiv. 465.

**W. Australia.** Towards Cape Riche, *Baxter*, *Preiss*, n. 478, *Drummond*, 5th coll. n. 415.

SECT. 2. CYRTOSTYLIS.—Leaves flat or undulate, the margins not revolute, toothed pinnatifid or pinnate. Style arched or nearly straight and turned upwards or curved, but not hooked after flowering, the stigmatic end small, not furrowed.

The foliage is that of *Orthostylis*, but the style less rigid and erect, and the stigmatic end that of *Oncostylis* and *Eubanksia*.

14. **B. attenuata**, *R. Br.* in *Trans. Linn. Soc.* x. 209, *Prod.* 395. A tree of 40 ft. with tomentose branches. Leaves linear or oblanceolate, serrate, tapering into a short petiole, 3 to 6 in. long, 3 to 5 lines broad towards the end, rather thick, flat, hoary-tomentose underneath with transverse veins and reticulations. Spikes cylindrical, 4 to 8 in. long. Bracts densely hirsute at the end. Perianth glabrous, the tube about  $\frac{1}{2}$  in., the limb 2 lines long, obtuse. Style remaining arched but not hooked, with a small slender stigmatic end. Fruiting cone thick. Capsule scarcely protruding from the remains of the flowers, villous,

above 1 in. broad and  $\frac{1}{2}$  in. thick, showing the scar or even the base of the style on the right-hand margin.—Meissn. in Pl. Preiss. ii. 264, and in DC. Prod. xiv. 458; F. Muell. Fragm. vii. 55; *B. cylindrostachya*, Lindl. Swan Riv. App. 34; Meissn. in Pl. Preiss. i. 583, and in DC. Prod. xiv. 455.

**W. Australia.** King George's Sound, *R. Brown*; Stirling Range, *F. Mueller*; thence to Swan river, *Fraser, Drummond*, 1st coll. suppl. n. 114, 3rd coll. n. 286, *Preiss*, n. 475; Serpentine and Murchison rivers, *Oldfield*.

15. **B. media**, *R. Br. Prot. Nov. 35*. A tall shrub or small tree, the branches hoary-tomentose. Leaves lanceolate-cuneate, truncate, serrate, tapering into a short petiole, 2 to 3 in. long in some specimens, twice as long in others,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. broad, flat, tomentose underneath with parallel transverse veins and reticulate between them. Spikes oblong or cylindrical, 3 to 6 in. long. Bracts hirsute at the end. Perianth about 1 in. long, the tube shortly silky-pubescent, the limb at first pubescent but soon becoming glabrous. Fruiting cone thick. Capsules immersed in the persistent remains of the flowers, nearly glabrous.—Meissn. in DC. Prod. xiv. 457; Bot. Mag. t. 3120.

**W. Australia.** Lucky Bay, Point Malcolm, to Cape Arid, *Baxter*; interior from Cape Riche, Gardner, Fitzgerald and Phillips Ranges, and away to the eastward, *Maxwell*.

16. **B. Solandri**, *R. Br. Prot. Nov. 36*. A tree, with tomentose branches. Leaves on rather long petioles, oblong, truncate, more or less divided into irregular triangular lobes very rarely reaching the midrib, 6 to 8 in. long,  $1\frac{1}{2}$  to 4 in. broad, flat, very rigid, the under surface pale and sometimes white, with numerous prominent transverse veins and conspicuous reticulations. Spikes oblong or cylindrical, 3 to 8 in. long. Perianths very slender, scarcely 1 in. long, the tube loosely silky-hairy, the limb narrow, acute, glabrous or with a very few long fine hairs. Style remaining curved but not hooked, with a small very short stigmatic end. Fruiting cone ovoid or oblong, 2 in. diameter. Capsules quite glabrous, thick with a slightly prominent acute ridge at the suture.—Meissn. in DC. Prod. xiv. 463; *B. Hookeri*, Drumm. in Bot. Mag. Ixxiv. Comp. 1.

**W. Australia.** Mountains near King George's Sound, *Baxter*; summit of Montgerup, *Drummond*, 4th coll. n. 305; Perongerup ranges and sand plains, Kalgan river, *Oldfield*.

17. **B. Goodii**, *R. Br. Prot. Nov. 36*. Stems short, woolly or tomentose, and apparently prostrate as in the three following species, but without leaves excepting close under the inflorescence. Leaves on long petioles,  $\frac{1}{2}$  to 1 ft. long, 1 to 3 in. broad, sinuate and irregularly toothed or lobed but the lobes rarely reaching half way to the midrib and usually very short, very rigid, the under surface tomentose but the tomentum deciduous and never white, the primary transverse veins prominent. Spikes oblong-cylindrical, 3 or 4 in. long, closely surrounded by the floral leaves and a few subulate plumose outer bracts. Perianth-tube not 1 in. long, loosely villous, the limb narrow, acute, at first bearded

with long hairs but soon glabrous. Style remaining curved but not hooked, with a very small stigmatic end.—Meissn. in DC. Prod. xiv. 463; *B. barbigera*, Meissn. in Pl. Preiss. ii. 264, and in DC. Prod. xiv. 463.

**W. Australia.** King George's Sound or to the eastward, *Baxter*, *Drummond*, 3rd coll. n. 290.

18. **B. petiolaris**, F. Muell. *Fragm.* iv. 109. Stems short, prostrate, thick and tomentose. Leaves erect, on long petioles, above 1 ft. long, truncate, sinuate with short callous teeth, tapering at the base, about 1 in. broad towards the top, flat or undulate, thick, the veins concealed on the under surface by a white tomentum. Spike erect as in *B. repens*, cylindrical, 5 in. long in the specimen before me. Perianth about  $\frac{3}{4}$  in. long, the tube loosely pubescent, the limb nearly 2 lines long, obtuse, bearing longer more deciduous hairs. Style remaining curved, with a very small stigmatic end.

**W. Australia.** Sandy plains, Cape Le Grand to Cape Arid, *Maxwell* (a single specimen in Herb. F. Mueller). Possibly a variety of *B. repens*, as suggested by F. Mueller, *Fragm.* vii. 58.

19. **B. repens**, Labill. *Voy.* i. 411, t. 23. Stems short, prostrate, thick, densely tomentose or woolly. Leaves erect, on long petioles, often a foot long, deeply and irregularly pinnatifid, the lobes varying from lanceolate or falcate entire and 1 to  $1\frac{1}{2}$  in. long to oblong-lanceolate or somewhat cuneate entire lobed or pinnatifid and 1 to 4 in. long, or to short broad and almost triangular, all thick and rigid, flat or undulate, the transverse veins prominent underneath and sometimes also on the upper surface. Spikes turned up at the end of the stems, not closely surrounded by leaves, oblong or cylindrical, 3 to 4 in. long. Perianths about 1 in. long, the tube pubescent with short crisped hairs, the limb recurved, nearly 2 lines long, obtuse, villous with much longer crisped hairs sometimes deciduous. Style remaining curved but not hooked, with a very small stigmatic end.—R. Br. in *Trans. Linn. Soc.* x. 211, Prod. 396; Meissn. in Pl. Preiss. i. 586, and in DC. Prod. xiv. 462; *B. polypodiifolia*, Knight, Prot. 113; *B. blechnifolia*, F. Muell. *Fragm.* iv. 108; *B. pinnatisecta*, F. Muell. *Fragm.* vii. 58 (name only).

**W. Australia.** King George's Sound or adjoining districts, *Labillardière*, *Baxter*, *Drummond*, 3rd coll. n. 291, *Oldfield*; sandy plains from Stirling Range to Young river, *Maxwell*.

20. **B. prostrata**, R. Br. *Prot.* Nov. 36. Stems prostrate, tomentose. Leaves erect, on long petioles, often above 1 ft. long and 1 to  $1\frac{1}{2}$  in. broad, divided about half way to the midrib into broad ovate or triangular mostly obtuse lobes, thick flat and rigid, the transverse veins scarcely prominent even on the under surface. Spikes turned up at the ends of the stems as in *B. repens*, not closely surrounded by leaves, oblong or cylindrical, rarely above 3 in. long. Perianth scarcely above  $\frac{3}{4}$  in. long, the tube loosely hirsute, the limb recurved, narrow, obtuse, at first densely bearded with long crisped and intricate ferruginous

woolly hairs, but soon becoming glabrous. Style remaining curved but not hooked, with a minute stigmatic end. Capsules slightly prominent, tomentose-villous, thick, 1 in. broad.—Meissn in Pl. Preiss. i. 587, and in DC. Prod. xiv. 462; Bot. Reg. t. 1572.

**W. Australia.** Sand plains, King George's Sound and neighbouring districts, *Baxter, Drummond*, 3rd coll. n. 289, *Preiss*, n. 480, and several others.

21. **B. grandis**, Willd. Spec. Pl. i. 535. A tree attaining about 40 ft., the branches tomentose. Leaves often 1 ft. long or more, divided to the midrib into ovate-triangular contiguous segments, the larger ones  $1\frac{1}{2}$  to 2 in. long and 1 in. broad at the base, the lower ones gradually smaller, all flat, with several primary transverse veins impressed above, prominent underneath, the under surface pale, reticulate, tomentose in the areolæ. Spike cylindrical, 8 to 12 in. long. Perianths above 1 in. long, the tube loosely villous, the limb glabrous, obtuse, scarcely  $1\frac{1}{2}$  lines long. Style long, remaining curved but not hooked, with a small oblong stigmatic end. "Capsules glabrous, 6 to 8 lines broad."—R. Br. in Trans. Linn. Soc. x. 210, Prod. 396; Meissn. in Pl. Preiss. i. 587, and in DC. Prod. xiv. 464.

**W. Australia.** King George's Sound, *R. Brown, Oldfield, F. Mueller*; Cape Riche, *Preiss*, n. 474, 492; Swan river, *Drummond*, 1st coll., *Oldfield*. The foliage is nearly that of *B. Baxteri*, the spikes and flowers very different.

22. **B. quercifolia**, R. Br. in Trans. Linn. Soc. x. 210, Prod. 396. An erect shrub of 5 or 6 ft., the branches and foliage glabrous. Leaves sessile or nearly so, oblong-cuneate, truncate, deeply and irregularly prickly-toothed or pinnatifid, tapering to the base, 2 to 4 in. long, flat or undulate, the transverse veins and reticulations more or less conspicuous underneath. Spikes oblong-cylindrical, dense but rather narrow, 3 to 4 in. long. Bracts with very short glabrous tips. Perianth-tube about  $\frac{1}{2}$  in. long, ferruginous-villous, the limb narrow, reflexed,  $2\frac{1}{2}$  lines long with an awn-like point at least as long, pubescent with shorter hairs than the tube. Style about  $\frac{3}{4}$  in. long, remaining curved, with a small very narrow stigmatic end. Capsules rounded, thick, glabrous or slightly tomentose,  $\frac{3}{4}$  in. broad.—Meissn. in Pl. Preiss. i. 585, and in DC. Prod. xiv. 462; Bot. Reg. t. 1430.

**W. Australia.** King George's Sound, *R. Brown, Baxter, Harvey, Preiss*, n. 489, *Oldfield*, and others. The foliage is nearly that of *B. Caleyi*.

Var. *integrifolia*, F. Muell. Fragm. vii. 57. Leaves cuneate, truncate, with a small central pungent point, entire or minutely 2- or 3-toothed. Capsules very thick, 1 in. broad.—East Mount Barren and Tulbinup, *Maxwell*.

23. **B. Baueri**, R. Br. Prot. Nov. 35. Probably arborescent, the branches tomentose or nearly glabrous. Leaves oblong-cuneate or almost lanceolate, truncate, sinuate-toothed, very shortly petiolate, mostly 3 to 4 in., sometimes 5 in. long, flat, the transverse veins prominent underneath and the reticulations conspicuous, scarcely tomentose. Spikes very thick and dense, globular or oblong, 6 to 8 in. long. Bracts densely villous at the end. Perianth-tube pubescent, the limb densely





villous, narrow, abruptly reflexed, about 3 lines long, ending in a plume-like point of  $\frac{1}{2}$  in. or more. Style remaining curved, with a narrow acute stigmatic end. Capsules concealed among the dense perianth-remains, very thick, glabrous, smooth,  $1\frac{1}{2}$  to  $1\frac{1}{3}$  in. broad.—Meissn. in DC. Prod. xiv. 460; F. Muell. Fragm. iv. 107.

**W. Australia.** King George's Sound or the neighbouring districts, *Barter, Drummond, 4th coll. n. 303*. The long fine points to the perianth-laminae forming awn-like ends to the limb before it opens, are quite peculiar to this and the preceding species.

SECT. 3. EUBANKSIA.—Leaves linear-lanceolate oblong or cuneate, with recurved or revolute entire or dentate margins, white underneath. Style at first curved, straight and very spreading or reflexed after the perianth-limb has opened, the stigmatic end very small, not furrowed.

The three species here included, divided into many more by R. Brown, Meissner and others, are so closely allied and so frequently connected by intermediates, that they might almost be considered as varieties of a single one.

24. **B. marginata**, Cav. Anal. Hist. Nat. i. 227, t. 13. Ic. vi. 29, t. 544. Usually a bushy shrub of 10 to 15 ft., growing out sometimes into a tree of considerable size or sometimes low and straggling or depressed, the branches tomentose or villous. Leaves of the flowering branches very shortly petiolate, oblong-lanceolate or broadly linear, obtuse or retuse, usually entire, with recurved margins, 1 to 2 in. long, in some flowerless branches or even on some flowering specimens some or all rather larger and more or less serrate with short rigid or prickly teeth, all very white underneath, minutely reticulate, without any or with very few of the transverse veins of *B. integrifolia*. Spikes oblong-cylindrical, 2 to 3 or rarely near 4 in. long, or in the dwarf varieties sometimes nearly globular and small. Bracts tomentose at the end. Perianths silky, 7 to 8 lines long. Style straightening after the perianth-laminae have separated, and usually very spreading or reflexed, with a small slender stigmatic end. Fruiting cone oblong-cylindrical; capsules prominent above the closely packed bracts, flat, not thick, rounded,  $\frac{1}{2}$  in. broad, at first pubescent but the hairs wearing off.—R. Br. in Trans. Linn. Soc. x. 204, Prod. 392, Meissn. in DC. Prod. xiv. 455; Bot. Mag. t. 1947; *B. microstachya*, Cav. Anal. Hist. Nat. i. 224, Ic. vi. 28, t. 541 (specimens with serrate leaves); *B. marginata*, Lodd. Bot. Cab. t. 61, and *B. oblongifolia*, Lodd. Bot. Cab. t. 241, not of others (both with serrate leaves); *B. australis*, R. Br. in Trans. Linn. Soc. x. 206; Prod. 393; Meissn. in DC. Prod. xiv. 456; Hook. f. Fl. Tasm. i. 329; Bot. Reg. t. 787; *B. depressa*, *B. patula* and *B. insularis*, R. Br. in Trans. Linn. Soc. x. 205, 206, Prod. 393; Meissn. I.c. 456; *B. Gunnii*, Meissn.; l.c.

**N. S. Wales.** Port Jackson, R. Brown, Sieber, n. 8, and others; Berrima and Mudgee, Woolls.

**Victoria.** Port Phillip, R. Brown; Wanganatta and Dandenong, F. Mueller; Melbourne, Adamson; Glenelg river, Robertson.

**Tasmania.** Port Dalrymple, Derwent river, and King's Island, *R. Brown*. Abundant throughout the island, ascending to 3000 ft., *J. D. Hooker*.

**S. Australia.** Port Lincoln, *R. Brown*; Boston Point, *Wilhelmi*; near Adelaide, *Whittaker*, *Blandowski*; Mount Barker and Cook's Creek, *Neumann*; Kangaroo Island, *Waterhouse*.

It appears from *R. Brown*'s labels that he had originally referred all his southern specimens to *B. marginata*, and the characters upon which he afterwards thought he could distinguish four southern species, fail so completely when applied to the large number of specimens we now possess that I have felt obliged to return to his original views. As a whole the species differs from *B. integrifolia* generally in the smaller leaves and flowers and in the leaves reticulate only without transverse veins. In some specimens however some of the leaves show a few of these veins, especially when toothed there is often one entering into each tooth.

*B. promorsa*, Dum, Conns., *B. ferrea*, Vent., and *B. hypoleuca*, Hoffm., are names of garden plants which have been referred by Meissner and others to this species. *B. marcescens*, Bonpl. Jard. Malm. 116, t. 48, appears to me to represent the toothed-leaved state of *B. marginata*, and not the true *B. marcescens*, Br.

**25. *B. integrifolia***, Linn. *F. Suppl.* 127. A tree attaining sometimes a considerable size, the young branches closely tomentose. Leaves scattered, sometimes irregularly verticillate, oblong cuneate or lanceolate, quite entire or irregularly toothed, tapering into a short petiole, 3 to 4 in. long in some specimens, twice that length in others, especially the northern ones,  $\frac{1}{2}$  to near 1 in. broad, white underneath, with numerous transverse veins and reticulations not very prominent; the young shoots are also sometimes tomentose or villous with richly coloured fulvous almost woolly hairs persisting on the under side till the leaves are nearly full grown. Spikes oblong or cylindrical, 3 to 6 in. long. Bracts tomentose at the end. Perianth usually about 1 in. long, silky. Style straightening after the perianth-laminae have separated and usually very spreading or reflexed as in *B. marginata*. Fruiting cone oblong, cylindrical, the capsules prominent and not thick, as in that species.—*R. Br.* in *Trans. Linn. Soc.* x. 206, Prod. 393; *Meissn.* in *DC. Prod.* xiv. 456; *Cav. Ic.* vi. t. 546; *Bot. Mag.* t. 2770; *B. spicata*, *Gärtn. Fr.* i. 221, t. 48; *B. oleifolia*, *Cav. Anal. Hist. Nat.* i. 228, t. 14, *Ic.* vi. 30, t. 545; *B. macrophylla*, *Link. Enum. Hort. Berol.* i. 116; *B. compar*, *R. Br.* in *Trans. Linn. Soc.* x. 207, Prod. 393; *Meissn.* in *DC. Prod.* xiv. 457.

**Queensland.** Keppel Bay, *R. Brown*, *O'Shanesy*; Brisbane river, Moreton Bay, *A. Cunningham*, *F. Mueller*, and others; Condamine river, *Leichhardt*; Mount Archer, *Bowman*; Rockhampton and Rockingham Bay, *Dallachy*. The greater number of these northern specimens have remarkably long leaves, sometimes 8 to 10 in long and  $\frac{3}{4}$  in. wide, and constitute the *B. compar*, Br. They have also usually rather larger flowers, but neither character is at all constant, and *R. Brown* had himself at first referred his specimens to *B. integrifolia*.

**N. S. Wales.** Port Jackson, *R. Brown*, *Sieber*, n. 4, and many others; northward to Hastings river, *Beckr*; Richmond river, *Farrett*; New England, *C. Stuart*; Mount Lindsay, *W. Hill*; southward to Twofold Bay, *F. Mueller*.

**Victoria.** Sealer's Cove, Port Phillip, Brighton, *F. Mueller*.

Var. *paludosa*. Flowers scarcely larger than in *B. marginata*, the perianth 7 to 8 lines long, but the leaves of one of the common short-leaved forms of *B. integrifolia*.—*B. paludosa*, *R. Br.* in *Trans. Linn. Soc.* x. 207; Prod. 394; *Meissn.* in *DC. Prod.* xiv. 457; *Bot. Reg.* t. 697; *Lodd. Bot. Cab.* t. 392.—Port Jackson, *R. Brown*, *Sieber*, n. 5. Distributed also from the Botanical Garden, St. Petersburg as *B. integrifolia*.

*B. oblongifolia*, Cav. Anal. Hist. Nat. i. 225, Ic. vi. t. 542; R. Br. in Trans. Linn. Soc. x. 208, Prod. 394; Meissn. in DC. Prod. xiv. 461, appears to be referrible to *B. integrifolia*, the specimens of Sieber, n. 5, and from Mount Lindsay, Fraser, have rather more coriaceous leaves than usual with the transverse veins more prominent, approaching in some degree *B. dentata*, but not otherwise distinguishable from the typical *B. integrifolia*. *B. glauca*, and *B. salicifolia*, Cav. Anal. Hist. Nat. i. 230, 231, Ic. vi. 31, *B. aspleniifolia*, Salisb. Prod. 51, *B. cuneifolia* and *B. reticulata*, Hollings, in Reem. and Schult. Syst. iii. Mant. 379; Meissn. in DC. Prod. xiv. 466, *Hakea pubescens*, Hort. Cels. in Steud. Nom. Bot. ed. 2, are garden plants which appear to have been correctly referred to *B. integrifolia*, although several of them have been described only as to their foliage.

26. **B. dentata**, Linn. *F. Suppl.* 127. A small tree of 15 to 20 ft. closely allied to *B. oblongifolia*. Leaves shortly petiolate, cuneate-oblong, 4 to 8 in. long, 1 to 2 in. broad, irregularly toothed, the margins slightly recurved, white underneath with the primary transverse veins more prominent than in *B. integrifolia* and not so white. Spikes oblong or cylindrical, usually larger than in *B. integrifolia* but the flowers in all other respects as well as the fruits entirely those of *B. integrifolia*. Styles about 1½ in. long, becoming straight, with a small narrow stigmatic end.—R. Br. in Trans. Linn. Soc. x. 210, Prod. 396; Meissn. in DC. Prod. xiv. 462; F. Muell. *Fragm.* vii. 57.

**N. Australia.** Islands of the Gulf of Carpentaria, *R. Brown*; Port Hurd, opposite Melville Island, *A. Cunningham*; Point Pearce, *F. Mueller*; Glenelg river, N.W. coast, *Martin*.

**Queensland.** Endeavour river, *Banks and Solander*, *A. Cunningham*.

SECT. 4. ORTHOSTYLLIS.—Leaves flat or undulate, regularly or rarely irregularly serrate pinnatifid or pinnate, with short lobes or segments. Perianth straight or the limb rarely reflexed. Style after the perianth limb has opened curved upwards at the base only, then straight rigid and erect, the stigmatic end prominently angled and furrowed or striate.

The foliage is that of *Cyrtostylis*, but the regular rigid erect often almost imbricate styles give the cones after the flowers have opened a different aspect, and the stigmatic ends of the styles are well marked. A few species have the styles elegantly curved before they are set free from the perianth-limb, and *B. latifolia* in its flowers and styles is almost intermediate between *Eubanksia* and *Orthostylis*.

27. **B. latifolia**, R. Br. in *Trans. Linn. Soc.* x. 208, *Prod.* 394. A low but stout shrub, the branches densely tomentose. Leaves shortly petiolate, obovate-oblong, often truncate, irregularly serrate with short usually prickly teeth, contracted at the base, 4 to 8 in. long, 1½ to 3 in. broad, flat, minutely tomentose but not white underneath, with prominent transverse veins and reticulations. Spikes oblong-cylindrical, 3 to 5 in. long. Perianth slender, about 1 in. long, the tube shortly silky-pubescent, the limb glabrous, narrow, acute, scarcely 2 lines long. Style becoming straight and spreading as in *Eubanksia*, with a very small stigmatic end. Fruiting cones large and thick; capsules villous, not thick, protruding, about 6 or 7 lines diameter.—Meissn. in DC. Prod. xiv. 460; Bot. Mag. t. 2406; *B. robur*, Cav. Anal. Hist. Nat. i.

226, Ic. vi. 29, t. 543; *B. uneigera* and *B. dilleniæfolia*, Knight, Prot. 112, 113; *B. fagifolia*, Hoffmgs.; Roem. and Schult. Syst. iii. Mant. 379 (Meissn.).

**Queensland.** Moreton Bay, *W. Hill*, *F. Mueller*.

**N. S. Wales.** Marshes about Port Jackson, *R. Brown*, *A. Cunningham*, *Leichhardt*; Hastings river, *Beckler*.

28. ***B. serrata***, Linn. *f. Suppl.* 126. A tree, the young shoots tomentose or villous and sometimes densely so with richly coloured ferruginous very deciduous hairs. Leaves oblong-lanceolate, acute or truncate, regularly and deeply serrate, tapering into a petiole, 3 to 6 in. long,  $\frac{1}{2}$  to 1 in. wide, coriaceous, flat, hoary or rarely white underneath, with parallel transverse veins. Spikes oblong-cylindrical or rarely globular, 3 to 6 in. long, very thick. Perianth shortly silky, the tube above 1 in. long, the laminae narrow, acuminate, nearly 3 lines long, the silky hairs longer than those of the tube. Style at length straight, with a cylindrical somewhat furrowed stigmatic end, about  $\frac{1}{2}$  line long and thickened at the base. Capsules very prominent, tomentose, thick and hard, obliquely rounded or ovate, above 1 in. broad.—*R. Br.* in *Trans. Linn. Soc.* x. 209, *Prod.* 395; *Sm.* in *White, Voy.* 223, t. 18 to 20; Meissn. in *DC. Prod.* xiv. 461; *F. Muell. Fragm.* vii. 56; *Andr. Bot. Rep.* t. 82; *B. conchifera*, *Gaertn. Fr.* i. 221, t. 48; *B. mitis*, Knight, *Prot.* 112; *B. dentata*, *Wendl. Hort. Herrenh.* t. 8; *B. media*, *Hook. f. Fl. Tasm.* i. 329, not of *R. Br.*

**N. S. Wales.** Botany Bay, *Banks* and *Solander*; Port Jackson, *A. Cunningham*, also according to Meissner, *Sieber*, n. 2, partly.

**Victoria.** Port Albert, *F. Mueller* (I have not seen the specimens).

**Tasmania.** N. coast on two hills called the Sisters, between Rocky and Table Capes, *Backhouse, Gunn*.

The plant figured by Cavanilles as *B. serrata* appears to be rather *B. æmula*; Bailon's figure, *Hist. Pl.* ii. 394, f. 230, is most probably taken from *B. attenuata*.

29. ***B. æmula***, *R. Br.* in *Trans. Linn. Soc.* x. 210, *Prod.* 395. A shrub very closely allied to *B. serrata* and difficult to distinguish from it except by the stigmatic end of the style which is very much shorter and ovoid. The flowers are also said to be of a yellowish green without the bluish grey tinge of *B. serrata*. The spikes are usually not so thick, the foliage precisely the same. Capsules at least as large as in *B. serrata*, the tomentum easily wearing off.—Meissn. in *DC. Prod.* xiv. 461; *Bot. Mag.* t. 2071; *Bot. Reg.* t. 688; *B. serrata*, *Cav. Ic. vi. 27, t. 540*, not of *Linn. f.*; *B. serratifolia*, *Salisb. Prod.* 51 or *B. serrafolia*, *Knight, Prot. 112 (R. Br.)*; *B. elatior*, *R. Br.* in *Trans. Linn. Soc.* x. 209, *Prod.* 395; Meissn. in *DC. Prod.* xiv. 458; *B. undulata*, *Lindl. Bot. Reg.* t. 1316.

**Queensland.** Sandy Cape, *R. Brown*; Stradbroke Island, Moreton Bay, *A. Cunningham*. I have not seen Brown's own specimens of *B. elatior*, which have been mislaid, but there seems no doubt that Cunningham was right in his identification.

**N. S. Wales.** Port Jackson, *R. Brown*, *Sieber*, n. 2 (our specimens at least), and others; Hastings river, *Beckler*; Twofold Bay, *L. Morton?* (leaves only).

**Victoria.** Gipps' Land, *F. Mueller*.

30. **B. ornata**, F. Muell. Meissn. in *Linnaea* xxvi. 352, and in *DC. Prod.* xiv. 460. A shrub of 5 or 6 ft., the branches densely hirsute. Leaves oblong-cuneate, mostly truncate, regularly serrate, tapering into a short petiole, 2 to 4 in. long,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. broad, flat, the transverse veins prominent underneath. Spikes globular or oblong-ovoid, 2 to 4 in. long. Bracts obtuse, villous. Perianth slender, villous with spreading hairs, 1 to  $1\frac{1}{4}$  in. long, the limb narrow, 3 lines long. Style curved upwards from the base, then becoming straight, stigmatic end narrow, furrowed. Fruiting cone ovoid; capsules prominent, very thick, tomentose-villous, fully  $\frac{3}{4}$  in. broad.—F. Muell. *Fragm.* vii. 56.

**Victoria.** N.W. districts, *L. Morton*; Wimmera, *Dallachy*.

**S. Australia.** Encounter Bay, *Whittaker*; Onkaparinga river and towards Guichin Bay, *F. Mueller*.

31. **B. coccinea**, R. Br. in *Trans. Linn. Soc.* x. 207, *Prod.* 394. An erect shrub attaining 12 to 15 ft., the branches densely tomentose, with a few long spreading hairs often intermixed. Leaves sessile or very shortly petiolate, from broadly oblong or obovate to almost orbicular or broader than long, truncate or reflex, often cordate at the base, bordered by small irregular prickly teeth,  $1\frac{1}{2}$  to  $2\frac{1}{2}$  in. long, flat, rigid, prominently pinniveined and reticulate underneath. Spikes globular, about 2 in. diameter, the flowers regularly imbricate in vertical (not spiral) rows, the tubes of those of each pair opening inwards for the emission of the style of which the end is retained in the reflexed limb, the spike thus long remaining elegantly striped by double rows of arched richly coloured red styles alternating with double rows of villous perianths. Each perianth about 1 in. long with a limb of about 2 lines. When at length liberated the style straightens; bearing a stigmatic end of about  $\frac{3}{4}$  line, furrowed, with a prominent rim round its base. Fruiting cone after the fall of the perianths ovoid, 1 to  $1\frac{1}{2}$  in. diameter, tomentose-villous; capsules very small thin and scarcely protruding, 4 or rarely 5 lines broad.—Meissn. in *Pl. Preiss.* i. 585, and in *DC. Prod.* xiv. 459; Bauer, *Illustr. t. 3*.

**W. Australia.** King George's Sound and adjoining districts, *R. Brown*, *Drummond*, 3rd coll. n. 284, *Preiss.* n. 481, and many others.

32. **B. sceptrum**, Meissn. in *Kew Journ.* vii. 120, and in *DC. Prod.* xiv. 459. A tall shrub or small tree of 10 to 15 ft., with thick closely tomentose branches. Leaves petiolate, oblong truncate, shortly sinuate-toothed,  $1\frac{1}{2}$  to  $2\frac{1}{2}$  in. long, flat, rigid, transversely veined and reticulate underneath. Spike oblong-cylindrical, thick and dense, 6 to 8 in. long, the curved styles protruding before the perianth-limb opens, alternating in single rows with the perianths. Perianth silky-villous, the tube  $\frac{1}{2}$  in., the obtuse limb 4 or 5 lines long. Style after it is set free from the perianth straight or flexuous, much longer than the perianth, with a thick furrowed stigmatic end of  $1\frac{1}{2}$  to 2 lines. Capsules prominent, very thick, variegated and hirsute, often 1 in. broad.

**W. Australia.** Hutt river, *Drummond*, 6th coll. n. 206; Murchison river, *Oldfield*.

33. **B. Menziesii**, *R. Br. Prot. Nov.* 36. A tree of 30 to 40 ft., the branches thick and tomentose. Leaves shortly petiolate, 6 in. to 1 ft. long,  $\frac{3}{4}$  to 1 in. wide, truncate, bordered by short broad teeth, more or less ferruginous-tomentose underneath with numerous parallel transverse veins. Spikes thick, oblong, 4 to 5 in. long. Bracts with broad obtuse tomentose pale coloured ends surrounded by the deeply coloured woolly hairs of the sides, marking the spike both in bud and after the perianths have fallen with a lozenge-shaped pattern in numerous spiral rows. Perianth-tube about 1 in. long, silky-pubescent, the limb erect, villous with longer hairs, about 3 lines long. Style incurved at the base, then erect and straight, with a furrowed stigmatic end about 1 to  $1\frac{1}{2}$  lines long. Capsules very prominent, oblique, thick, tomentose.—Meissn. in *Pl. Preiss.* i. 584, and in *DC. Prod.* xiv. 459.

**W. Australia.** Swan river, Collie, Drummond, 1st coll., Preiss, n. 477; Murchison river, Oldfield.

34. **B. lævigata**, Meissn. in *DC. Prod.* xiv. 458. A shrub? with tomentose branches. Leaves linear-cuneate, truncate, serrate, contracted into a short petiole, 2 to 4 in. long, thick, flat, with the transverse veins very fine and slightly impressed underneath. Spikes globular, resembling those of *B. ornata*, 2 to 3 in. diameter. Perianths incurved at the base, erect, hirsute with spreading hairs, scarcely 1 in. long, the narrow limb about  $1\frac{1}{2}$  lines long. Style slender, incurved, with a small narrow slightly furrowed stigmatic end. Fruiting cone globular, about 3 in. diameter; capsules slightly prominent, rounded, thick, villous, about  $\frac{1}{2}$  in. broad.

**W. Australia.** Between Swan river and Cape Riche, Drummond, 5th coll. n. 414, or in some herbaria, 415; East Mount Barren, Maxwell.

35. **B. Hookeriana**, Meissn. in *Hook. Kew Journ.* vii. 119, and in *DC. Prod.* xiv. 458. A shrub of 5 or 6 ft., with densely tomentose branches. Leaves linear-cuneate, 4 to 8 in. long, 4 to 5 lines broad near the end, tapering into a short petiole, divided nearly half-way to the midrib into numerous broadly triangular teeth or lobes, minutely tomentose underneath, the veins inconspicuous. Spikes oblong, very thick, 4 to 5 in. long. Perianth curved upwards, nearly  $1\frac{1}{2}$  in. long, the limb about 3 lines long, densely hirsute with long spreading hairs. Style rigid, incurved at the base, then erect and straight, with a slender furrowed stigmatic end.

**W. Australia.** Between Tea-tree swamp and Irwin river, Drummond, 6th coll. n. 202.

36. **B. prionotes**, Lindl. *Swan Riv. App.* 34. A tree of about 30 ft., with thick tomentose branches. Leaves 8 in. to above 1 ft. long,  $\frac{1}{2}$  to 1 in. broad, truncate, pinnatifid with numerous rather regular lobes not reaching half-way to the midrib, broader than long, rounded, flat, with short rigid but not pungent points, the transverse veins numerous and fine, visible underneath and converging at the apex of each lobe. Spikes thick, oblong, 3 to 5 in. long. Perianth incurved

and erect, the tube nearly 1 in. long, villous, the limb 3 lines long, very densely villous with spreading hairs. Style rigid, incurved at the base, then erect, with a narrow furrowed stigmatic end of 1 to 1½ lines. Fruiting cones after the fall of the perianth-remains showing the prominent conical tomentose ends of the bracts; capsules prominent, rounded, rather thick, tomentose or shortly villous, about ¾ in. broad, the lateral base of the style more or less prominent.—Meissn. in Pl. Preiss. i. 584, and in DC. Prod. xiv. 459.

**W. Australia.** Between Swan river and King George's Sound, *Drummond*, 1st coll., 3rd coll. n. 288, *Preiss*, n. 476, *Harvey*; Upper Gardner river, *Hassell*; Murchison river, *Oldfield*.

37. **B. Victoriae**, Meissn. in *Hook. Kew Journ.* vii. 119, and in DC. Prod. xiv. 464. A shrub of 12 to 15 ft., nearly allied to *B. prionotes* but the branches more hirsute, the leaves divided more than half-way to the midrib into broad triangular acute or acuminate lobes, the larger ones fully ½ in. long and broad, and the loose ferruginous wool more persistent although ultimately deciduous. Spike of *B. prionotes*, but the outer bracts at the base above ½ inch long and plumose with long hairs. Perianth rather longer than in *B. prionotes*, much more villous, especially the limb. Style the same. Capsules more prominent, 1 in. broad, densely villous with purple hairs.—Bot. Mag. t. 4906; *B. speciosa*, Lindl. Bot. Reg. t. 1728, not of R. Br.

**W. Australia.** Hutt river, *Drummond*, 6th coll. n. 203; Baker's Well, *Oldfield*.

38. **B. speciosa**, R. Br. in *Trans. Linn. Soc.* x. 210, Prod. 396. A tall shrub, with thick tomentose branches. Leaves shortly petiolate, 8 in. to above 1 ft. long, divided to the midrib into numerous contiguous rounded or triangular shortly acuminata segments, the larger ones ¾ in. broad at the base and nearly as long, diminishing towards each end of the leaf, flat, rigid, retaining more or less of a white tomentum underneath, with numerous transverse converging veins. Spikes very thick, oblong, 4 to 5 in. long. Perianths incurved upwards, hirsute, the tube about 1 in., the obtuse hirsute limb about 2½ lines long. Style incurved at the base, erect, rigid, hairy; stigmatic end stipitate and furrowed.—Meissn. in DC. Prod. xiv. 464; Bot. Mag. t. 3052 (the leaves not quite correct); *B. grandidentata*, Dum. Cours (Meissn.).

**W. Australia.** Lucky Bay, *R. Brown*, *Baxter*.

39. **B. Baxteri**, R. Br. Prot. Nov. 36. A tall shrub, the branches glabrous or hirsute under the spikes with long fine spreading hairs. Leaves mostly 3 to 4 m. long, divided to the middle into ovate-triangular acute contiguous segments, the larger ones 1 in. long and ¾ in. broad at the base but mostly smaller, flat, rigid, pale or whitish underneath with several fine and faint transverse converging veins. Spikes globular, 2 to 3 in. diameter, the outer linear bracts plumose with long fine hairs. Perianths hirsute with long fine hairs, 1½ in. long, the limb narrow, acute or acuminate, about 4 lines long. Style incurved at the base, erect, thick and rigid, densely hairy, the stig-

matic end narrow, acute, furrowed. Capsules prominent, very thick and woody,  $1\frac{1}{2}$  in. broad.—Meissn. in Pl. Preiss. i. 587, and in DC. Prod. xiv. 464.

**W. Australia.** King George's Sound or adjoining districts, Baxter, Drummond, 4th coll. n. 306, Preiss. n. 485, Harvey; flat sandy plains from Stirling Range to Salt river, Maxwell.

40. **B. marcescens**, R. Br. in *Trans. Linn. Soc.* x. 208, *Prod.* 395. A shrub of 5 or 6 ft. the branches tomentose. Leaves petiolate, oblong, truncate, serrate, almost obtuse at the base, 1 to  $1\frac{1}{2}$  in. long and about  $\frac{1}{2}$  in. broad, flat, minutely tomentose underneath with faint transverse veins and reticulations. Spikes oblong or cylindrical, dense, 3 to 10 in. long, like those of *B. media*. Bracts tomentose at the end. Perianth purple, glabrous, scarcely 1 in. long, the limb narrow, obtuse, about 2 lines long. Style erect, about as long as the perianth, the stigmatic end short and sulcate. Capsules usually buried in the persistent remains of the flowers, rather thick, rounded, about  $\frac{3}{4}$  in. broad, quite glabrous and shining but chagrined with raised dots or tubercles.—Meissn. in Pl. Preiss. i. 586, and in DC. Prod. xiv. 461; Sw. Fl. Austral. t. 14; Bot. Mag. t. 2803; *B. præmorsa*, Andr. Bot. Rep. t. 258; *B. asplenifolia*, Knight, Prot. 113, not of Salisb. (*R. Br.*).

**W. Australia.** King George's Sound, Menzies, Baxter, Drummond, 3rd coll. n. 285, Preiss. n. 484.

Bonpland's figure and description of *B. marcescens*, Jard. Malm. 116, t. 48, appear to me to represent rather one of the garden varieties of *B. marginata*. I have not seen Preiss's specimens above quoted from Meissner.

41. **B. Lemanniana**, Meissn. in DC. Prod. xiv. 462. Branches tomentose or shortly villous. Leaves petiolate, obovate-oblong, less truncate than in most species, almost regularly toothed, cuneate at the base,  $1\frac{1}{2}$  to 3 in. long, flat, loosely tomentose underneath when young, the transverse veins and reticulations visible but not prominent. Spikes globular or shortly oblong, very thick, 3 to 4 in. long. Perianths glabrous, above 1 in. long, the narrow obtuse limb about 4 lines. Style slightly curved, erect, the stigmatic end long narrow and furrowed.

**W. Australia**, Drummond, 4th coll. n. 302.

42. **B. Caleyi**, R. Br. Prot. Nov. 35. A low shrub, the branches tomentose. Leaves oblong-lanceolate or narrow-cuneate, usually truncate, sinuate and broadly prickly-toothed or almost pinnatifid, tapering into a short petiole, 3 to 6 in. long, flat or undulate, green on both sides, finely and not prominently transversely veined and reticulate underneath. Spikes ovoid-oblong or globular, 2 to 3 in. long. Bracts obtuse, densely villous. Perianths nearly 1 in. long, quite glabrous or with a minute and scanty pubescence on the tube, the limb very angular and obtuse, about 4 lines long. Style incurved, erect, the stigmatic end long narrow and furrowed, with a projecting rim at the base. Meissn. in DC. Prod. xiv. 462.

**W. Australia**, Baxter, Drummond, 4th coll. n. 301.

43. **B. Lindleyana**, Meissn. in Hook. *Kew Journ.* vii. 120, and in *D.C. Prod.* xiv. 455. A shrub of 3 or 4 ft., differing slightly from *B. Caleyi* in the narrower serrate leaves and the flowers usually larger. Young shoots tomentose and villous, leafy branches hoary or almost glabrous. Leaves linear-lanceolate, serrate, tapering into a short petiole, 2 to 4 in. long, flat, slightly tomentose, reticulate and pitted underneath. Spikes very thick, ovoid-globular, about 4 in. long. Bracts woolly-tomentose with short obtuse points prominent above the bracteoles. Perianth glabrous, the tube nearly 1 in. long, the obtuse angular limb 3 to 4 lines. Style incurved, erect, the stigmatic end long, narrow and furrowed.

**W. Australia.** Murchison river, *Oldfield*, Drummond, 6th coll. n. 204.

44. **B. elegans**, Meissa, in Hook. *Kew Journ.* vii. 119, and in *D.C. Prod.* xiv. 465. A small tree, the specimens at first sight closely resembling those of *B. Candolleana*, the leaves of the same size, with numerous broad pungent-pointed lobes, but divided only a little more than half way to the midrib, and the under surface pale or whitish with a minute tomentum, which almost conceals the veins, the smaller reticulations quite inconspicuous. Spikes globular, larger and more dense than in *B. Candolleana*. Perianth straight, fully 1 in. long, the tube minutely pubescent, the limb narrow, glabrous, fully 2 lines long. Style curved, erect, the stigmatic end fusiform and furrowed.

**W. Australia.** Valley of the Lakes, Hill river, Drummond, 6th coll. n. 200.

45. **B. Candolleana**, Meissn. in Hook. *Kew Journ.* vii. 118, and in *D.C. Prod.* xiv. 465. A shrub with a creeping underground trunk and erect leafy stems of 1 to 2 ft., the flowering ones often short with few leaves, all minutely tomentose or glabrous. Leaves shortly petiolate, often 1 ft. long or more, divided to the midrib into numerous broad ovate-triangular contiguous segments, the larger ones scarcely above 4 lines long and broad, all pungent-pointed, flat, rigid, strongly veined and reticulate underneath. Spikes ovoid-globular, not surrounded by leaves, about 1½ in. long without the perianths, which are not so dense as in most species, straight, about 1 in. long, the tube slender, minutely pubescent or glabrous, the limb oblong, glabrous, striate, about 2 lines long. Style curved, erect; stigmatic end fusiform, sulcate. Capsules very prominent, hard, thick, tomentose, the projecting portion 2 in. long and 1½ in. broad, with a small lateral conical beak or persistent base of the style.—F. Muell. *Fragm.* vii. 58.

**W. Australia.** Dundagaran and Hill river, Drummond, 6th coll. n. 201.

SECT. 5. ISOSTYLIS.—Spikes reduced to depressed globular heads. Perianth-limb opening as soon as the limb, the style straight, not longer than the perianth, with a small stigmatic end.

46. **B. ilicifolia**, R. Br. in *Trans. Linn. Soc.* x. 211, *Prod.* 396, *Prot.* Nov. 37. A tree attaining from 20 to 40 ft., or sometimes remaining shrubby and 8 to 10 ft. high, the branches tomentose and often hirsute

with a few long spreading hairs. Leaves shortly petiolate, oval-oblong obovate or cuneate, truncate, undulate and irregularly prickly-toothed or lobed, 1 to 3 in. long, green on both sides, veined and reticulate underneath, but the veins rarely prominent. Spikes terminal, depressed, globular, sessile amongst the floral leaves, the rachis with the closely packed villous bracts about  $\frac{1}{2}$  in. diameter. Perianth erect, straight, the tube shortly silky-pubescent, 1 to  $1\frac{1}{2}$  in. long, the limb obtuse, glabrous or nearly so, not 2 lines long. Style not longer than the perianth, erect, straight, glabrous, with a small scarcely distinct stigmatic end. Fruiting cone very small. Capsules usually 1 or 2 only, very prominent, obliquely ovoid, thick, tomentose, the projecting portion  $\frac{1}{2}$  to  $\frac{2}{3}$  in. long, with a scarcely prominent lateral beak or scar indicating the base of the style.—Meissn. in Pl. Preiss. i. 589 and in DC. Prod. xiv. 466; *B. aquifolium*, Lindl. Swan Riv. App. 31.

**W. Australia.** King George's Sound and the neighbouring districts, R. Brown, Baxter, A. Cunningham, Olfield, F. Mueller; Swan river, Drummond, 1st coll., Preiss, n. 482.

The specimens at first sight closely resemble those of some forms of *Dryandra floribunda*, to which I find them referred in several herbaria, as also by F. Mueller, Fragm. vi. 92, and vii. 50.

Var. *integrifolia*. Leaves obovate, entire or scarcely toothed.—Swan river, Preiss, n. 482 (some specimens).

## 29. DRYANDRA, Br.

(*Hemiclidia*, Br., *Josephia*, Salisb.)

Flowers hermaphrodite. Perianth regular or nearly so, usually straight, the tube slender, the limb oblong or linear, the laminae separating as the tube opens, or rarely remaining long coherent as in *Banksia*, and the limb thus sometimes reflexed before opening, the tube separating into the four claws to below the middle, the base of the tube remaining entire. Anthers narrow, sessile in the concave laminae, the connective thick, usually very shortly produced beyond the cells. Hypogynous scales 4, very narrow, thin and membranous (rarely deficient?), usually accompanied by a few long hairs. Ovary very small and sessile; style straight and scarcely exceeding the perianth, or longer, curved and protruding from a slit in the perianth-tube until the end is set free by the separation of the laminae and then straightened; the stigmatic end, on a level with the anthers, of a different texture, smooth or striate and furrowed, continuous with the style or thickened at the base into a slightly prominent rim, the real stigma small and terminal; ovules 2 (usually or always?), laterally attached at or near the top. Fruit a compressed capsule, opening at the dilated end (or outer margin) in two coriaceous or rarely almost woody broad valves. Seeds 2, or 1 by abortion, compressed, with a terminal membranous wing broad and rounded like the valves, the seeds either separated by a plate simple between the nuclei, double between the valves, as in *Banksia*, but not so thick, or the outer integuments of the 2





seeds remain distinct from each other but separated from the seeds forming two membranous plates between the seeds, or remaining attached to the nucleus or to the whole seed leaving the seeds separate, each with a double or single wing.—Shrubs, often low or flowering near the base. Leaves alternate, very rarely entire, usually either sinuate and prickly-toothed, or pinnatifid or pinnate with numerous small regular lobes or segments, usually smooth and veinless on the upper surface, white-tomentose or marked with parallel transverse veins underneath. Flowers sessile, in pairs, in dense terminal or lateral heads in an involucre of numerous imbricate scale-like bracts and usually surrounded by a ring of floral leaves similar to the stem leaves; receptacle flat or convex, densely villous or woolly, with narrow-linear villous or woolly bracts or palea subtending each pair of flowers, sometimes very small or deficient at least in the centre of the head. Perianth usually yellow, the short entire base glabrous or villous towards the divided part, the remainder of the tube or claws usually pubescent or villous, the limb occasionally, the whole perianth very rarely, glabrous. Ovary almost always hairy. Capsules usually villous, but the hairs very readily rubbing off, and in some species apparently glabrous from the first.

The genus is endemic in West Australia. It is readily distinguished from *Banksia* by the involucre, by the flat or nearly flat receptacle, and by the fruit; but the structure of the flowers is so uniform that it is very difficult to establish any definite sections. The differences in the foliage correspond but very little with those in inflorescence, and both are variable in some species. Meissner has founded his groups on the former, I have preferred the inflorescence, which appears to me more characteristic. With regard to the sections founded upon the differences in the so-called dissepiment of the capsule (the plate intervening between the seeds), I have adopted them upon the supposition that these differences are constant, but the seeds remain to be examined in a considerable number of species. If it should prove that these species, here arranged according to their apparent affinity with those whose seeds are known, have been misplaced, all practical utility in these sections will be lost, and some other principle of division must be sought for, although no good one has as yet suggested itself.

SECT. 1. **Eudryandra.**—Outer integuments of the inner faces of the two seeds united in a bijid plate separating from them. Involucres various, the bracts narrow or very rarely rather broad.

SERIES 1. **Armatæ.**—Flower heads usually large, mostly terminal, enclosed in floral leaves longer than the flowers. Involucres broad. Perianths above 1 in. long. Leaves with prickly teeth or lobes.

- |   |                            |
|---|----------------------------|
| Involucres (2 in.) as long as the flowers. Leaves obovate-oblong,<br>deeply prickly-toothed, not white underneath . . . . .   | 1. <i>D. quercifolia</i> . |
| Involucres about half as long as the flowers.<br>Leaves obovate or oblong-cuneate, prickly-toothed.   |                            |
| Leaves white underneath . . . . .   | 2. <i>D. præmorsa</i> .    |
| Leaves green on both sides . . . . .  | 3. <i>D. cuneata</i> .     |
| Leaves pinnatifid, with flat pungent-pointed lobes.<br>Perianth limb glabrous. Fruit 1-seeded . . . . .   | 4. <i>D. falcata</i> .     |
| Perianth-limb more or less hairy. Fruit 2-seeded . . . . .  | 5. <i>D. armata</i> .      |
| Leaves divided to the midrib or nearly so into small rigid seg-<br>ments with revolute margins.<br>Leaves 6 in. to 1 ft. long, the lobes lanceolate or triangular . . . . . | 6. <i>D. longifolia</i> .  |
| Leaves 2 to 4 in. long, the segments linear, distant. . . . .   | 7. <i>D. Fraseri</i> .     |

SERIES 2. **Floribundæ**.—Flower-heads small, mostly terminal, the floral leaves either shorter than the flowers or few and spreading. Involucres broad. Perianths under 1 in. long.

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| Leaves obovate or cuneate, prickly-toothed, flat. Perianth silky-pubescent . . . . .   | 8. <i>D. floribunda</i> .    |
| Leaves lanceolate, prickly-toothed or semipinnatifid, flat. Perianth silky hairy . . . . .   | 9. <i>D. carduacea</i> .     |
| Leaves linear with revolute margins, entire or with few prickly teeth. Perianth glabrous . . . . .                                 | 10. <i>D. carlinoides</i> .  |
| Leaves pinnate with numerous small segments, the margins revolute. Leaf-segments narrow, distant. Perianth limb glabrous . . . . . | 11. <i>D. polyccephala</i> . |
| Leaf-segments short, approximate. Perianth-limb narrow, densely villous . . . . .  | 12. <i>D. Kippistiana</i> .  |

SERIES 3. **Concinnæ**.—Flower-heads small, broad, axillary, the bracts narrow, the floral leaves usually spreading. Leaves flat or nearly so, concinose underneath, pinnatifid, with short lobes.

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| Leaves narrow, the lobes small and distant . . . . .   | 13. <i>D. squarrosa</i> . |
| (See also 33, <i>D. patens</i> , with the flower-heads of the <i>Concinnæ</i> but the foliage of the <i>Obvallatæ</i> .) |                           |
| Leaf-lobes contiguous, ovate-triangular, mucronate-acute. Leaf-lobes reaching about halfway to the midrib . . . . .      | 14. <i>D. serra</i> .     |
| Involucral bracts acute, ciliate . . . . .   | 15. <i>D. concinna</i> .  |
| Involucral bracts obtuse, tomentose . . . . .  | 16. <i>D. foliolata</i> . |

SERIES 4. **Formosæ**.—Flower heads large, broad, terminal or axillary. Involucral bracts broad, villous. Leaves flat or nearly so, with numerous contiguous triangular lobes or segments, tomentose underneath, acute but not pungent-pointed.

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| Leaf-lobes scarcely reaching above halfway to the midrib. Flower-heads mostly terminal . . . . .             | 17. <i>D. stuposa</i> .     |
| Leaf-lobes deep but not reaching the midrib. Flower-heads mostly lateral. Styles nearly 2 in. long . . . . . | 18. <i>D. nobilis</i> .     |
| Styles under 1½ in. long . . . . .   | 19. <i>D. mucronulata</i> . |
| Leaves divided to the midrib. Leaf-segments 2 to 4 lines long. Flower-heads mostly terminal . . . . .        | 20. <i>D. formosa</i> .     |
| Leaf-segments under 2 lines long. Flower-heads mostly lateral . . . . .                                      | 21. <i>D. Baxteri</i> .     |

SERIES 5. **Niveæ**.—Flowering stems from a creeping trunk very short, with one or few crowded flower heads surrounded by long floral leaves. Leaves pinnate with numerous rigid segments white underneath except in *D. nana*.

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| Leaf-segments contiguous, triangular or falcate, 1 to 3 lines long . . . . .  | 22. <i>D. nivea</i> .      |
| Leaf-segments separated by broad sinuses, linear, 2 to 4 lines long. Style under 2 in. long; stigmatic end narrow . . . . . | 23. <i>D. arctotidis</i> . |
| Style about 3 in. long; stigmatic end large, ovoid . . . . .  | 24. <i>D. nana</i> .       |
| Leaf-segments linear, ½ to above 1 in. long, some of them again lobed . . . . .   | 25. <i>D. Preissii</i> .   |
| (See also 30, <i>D. vestita</i> , which has sometimes dwarf flowering-stems.)   |                            |

SERIES 6. **Obvallatæ**.—Flower heads axillary, ovoid or small, enclosed in long floral leaves. Leaves either pinnate with very small rigid segments or more frequently pinnatifid with very rigid pungent pointed lobes.

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| Leaves pinnate with numerous decurrent segments, under 2 lines long, the margins revolute. |  |
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- Involucral bracts numerous, with long plumose points.  
 Perianth about  $\frac{3}{4}$  in. long . . . . . 26. *D. sclerophylla*.  
 Involucral bracts few besides the leafy ones. Perianth  
 nearly 1 in. long . . . . . 27. *D. pulchella*  
 Leaves pinnatifid with pungent pointed lobes.  
 Involucral bracts with long plumose-hairy points, or some  
 of them leafy.  
 Leaf-lobes triangular, approximate, white underneath . . . . . 28. *D. plumosa*.  
 Leaf-lobes linear or lanceolate, usually distant . . . . . 29. *D. seneciifolia*.  
 Involucral bracts numerous, narrow, tomentose or villous,  
 but not plumose.  
 Involucre narrow, 1 in. long. Leaf lobes nearly flat.  
 Leaf-lobes about as long as the broad rhachis . . . . . 30. *D. vestita*.  
 Leaf-lobes much longer than the narrow rhachis . . . . . 31. *D. cirsoides*.  
 Involucre campanulate or broadly ovoid, under  $\frac{3}{4}$  in.  
 long. Leaf-lobes distant, with revolute margins,  
 white underneath.  
 Perianth-limb glabrous. Involucre broad,  $\frac{1}{2}$  in. diameter.  
 Bracts with acute, usually recurved tips. Floral  
 leaves appressed . . . . . 32. *D. Hewardiana*.  
 Bracts obtuse, appressed. Floral leaves spreading . . . . . 33. *D. patens*.  
 Perianth-limb hairy. Involucre ovoid,  $\frac{3}{4}$  in. long, the  
 bracts appressed or inflexed . . . . . 34. *D. conferta*.  
 Involucral bracts hirsute, the inner bracts above 1 in. long,  
 the upper half reflexed and deciduous . . . . . 35. *D. horrida*.  
 Involucres glabrous or nearly so, the bracts rather broad  
 and closely appressed.  
 Leaves 2 or 3 in. long, with linear or lanceolate lobes not  
 distant. Involucre  $\frac{3}{4}$  in. long . . . . . 36. *D. serratuloides*.  
 Leaves 6 in. to above 1 ft. long, very narrow, with small  
 distant lobes. Involucre above 1 in. long . . . . . 37. *D. comosa*.

Series 7. **Gymnocephalae.** *Flower heads lateral, on very short scaly peduncles without floral leaves outside the involucre. Involucral bracts very numerous and narrow, a few of them leaf-like in one species.*

- Involucral bracts all very narrow, acute and dry.  
 Leaves (2 to 4 in.) pinnate with numerous very small seg-  
 ments with revolute margins and white underneath.  
 Involucre 1 in. long . . . . . 38. *D. Shuttleworthiana*.  
 Leaves (3 to 5 in.) narrow and entire. Involucre 2 in. long . . . . . 39. *D. speciosa*.  
 Several of the outer involucral bracts leaf-like. Leaves under  
 2 in. long, linear-cuneate, mostly 3-toothed . . . . . 40. *D. tridentata*.

Series 2. **Aphragmia.** *Outer integuments of the two seeds not connate or readily separable from each other (seeds without any or with a double plate between them). Involucre large, with numerous broad bracts.*

- Involucres broad, lateral below the leafy branches, the bracts  
 black, glabrous or minutely ciliate.  
 Leaves very narrow, entire, or with few or very numerous  
 short not pungent-pointed segments . . . . . 41. *D. tenuifolia*.  
 Leaves under  $\frac{1}{2}$  in. broad, pinnatifid with distant trian-  
 gular pungent-pointed lobes . . . . . 42. *D. proteoides*.  
 Leaves above  $\frac{1}{2}$  in. broad, pinnatifid with broadly trian-  
 gular rigid acute lobes . . . . . 43. *D. runcinata*.  
 Involucres ovoid, terminating very short ascending stems,  
 with a few leaves below them.  
 Leaf-lobes broadly triangular, rigid, acute . . . . . 43. *D. runcinata*.

- Leaf-lobes short, very numerous, regular and obtuse. Involucre 2 in. long, glabrous and black . . . . . 44. *D. obtusa*.  
 Leaf-lobes linear, often again divided. Involucre 3 in. long, pale coloured, tomentose when young. . . . . 45. *D. bipinnatifida*.  
 Involucres terminal, broad, villous, surrounded by long floral leaves.  
 Leaf-segments linear or narrow-lanceolate . . . . . 46. *D. pteridifolia*.  
 Leaf-segments ovate lanceolate or triangular . . . . . 47. *D. calophylla*.

SECT. 1. EUDRYANDRA, Meissn.—Outer integuments of the inner faces of the two seeds united in a bifid plate separating from them. Involucres various.

See below, the observations under Sect. 2.

SERIES 1. ARMATÆ.—Flower-heads usually large, mostly terminal, enclosed in floral leaves longer than the flowers. Involucres broad. Perianths above 1 in. long. Stigmatic end of the style slender, often scarcely distinct. Leaves with prickly teeth or lobes.

This series differs from the *Formosæ* chiefly in the foliage.

1. ***D. quercifolia***, Meissn. in DC. Prod. xiv. 467. Branches stout, tomentose or villous. Leaves obovate-oblong or oblong-cuneate, undulate and deeply prickly-toothed or lobed, contracted into a short petiole, 3 to 4 in. long, flat, very rigid, veined and reticulate underneath but quite glabrous. Flower-heads terminal, very large, surrounded by floral leaves longer than the flowers. Involucre hemispherical or nearly globular, nearly 2 in. long, densely villous, the outer bracts subulate-acuminate, the inner ones linear or linear-lanceolate. Perianth about as long as the involucre, hoary-tomentose above the short glabrous base, the remainder silky-villous, the limb narrow, 3 lines long. Style longer than the perianth, the stigmatic end long slender and furrowed. Capsule obovate-falcate, fully  $\frac{1}{2}$  in. broad.—F. Muell. Fragm. vii. 50.

**W. Australia**, Drummond, 4th coll. n. 307.

2. ***D. præmorsa***, Meissn. in Pl. Preiss. ii. 265, and in DC. Prod. xiv. 467. Branches tomentose and sometimes hispid with spreading hairs. Leaves obovate or oblong-cuneate, truncate, undulate, coarsely prickly-toothed or lobed, 1½ to 3 in. long, white underneath, with prominent transverse veins. Flower-heads terminal, surrounded by floral leaves at least as long as the flowers. Involucre broad, the outer bracts broadly lanceolate and tomentose, the inner ones narrow and acute, about half as long as the flowers. Perianth above 1 in. long, silky-villous, the limb 2 lines long, villous with longer hairs than those of the tube. Style longer than the perianth, with a distinctly sulcate stigmatic end of about 1 line. Capsule obovate-falcate, rather above  $\frac{1}{2}$  in. long.

**W. Australia**, Drummond, n. 26, 125, 2nd. coll. n. 339, 5th coll. n. 422.

3. ***D. cuneata***, R. Br. in Trans. Linn. Soc. x. 212, Prod. 397. A tall shrub, the branches rather thick, tomentose and often hispid with long spreading hairs. Leaves shortly petiolate, from obovate to oblong-

cuneate, undulate and deeply prickly-toothed or almost entire, tapering at the base,  $1\frac{1}{2}$  to  $2\frac{1}{2}$  or rarely 3 in. long, pinniveined and reticulate but not white underneath. Flower-heads terminal, closely surrounded by floral leaves longer than the flowers. Involure broad, about  $\frac{1}{2}$  in. long, silky-tomentose, the outer bracts lanceolate and some of them almost leafy, the inner ones very narrow, passing into the filiform paleæ. Perianth about  $1\frac{1}{4}$  in. long, hirsute with fine hairs, short on the tube rather longer on the limb, the limb narrow, acute,  $2\frac{1}{2}$  lines long. Style nearly  $1\frac{1}{2}$  in. long, the stigmatic end slender, obscurely furrowed. Capsule broadly rounded, about  $\frac{1}{2}$  in. diameter. — Meissn. in Pl. Preiss. i. 590, and in DC. Prod. xiv. 468.

**W. Australia.** King George's Sound or adjoining districts, R. Brown, Baxter, Drummond, n. 175, 3rd coll. n. 292, Maxwell.

**4. D. falcata, R. Br. in Trans. Linn. Soc. x. 213, Prod. 397.** A shrub of 4 or 5 ft., the young branches usually tomentose and hirsute with spreading hairs. Leaves more or less cuneate, pinnatifid or deeply toothed with lanceolate pungent-pointed teeth or lobes, tapering at the base but almost sessile, mostly 2 to 3 in. long, flat or undulate, very rigid and not white underneath. Flower-heads terminal, closely surrounded by floral leaves longer than the flowers. Involucres broadly ovoid or almost globular, 7 to 8 lines long, the outer bracts linear-lanceolate and tomentose, the inner ones narrow-linear. Perianth  $1\frac{1}{4}$  to  $1\frac{1}{2}$  in. long, the tube woolly-tomentose above the glabrous base, the limb glabrous. Style scarcely exceeding the perianth, the stigmatic end slender and not very distinct. Capsule "1-seeded by abortion, the abortive ovule forming a wing-like appendage to the interseminal plate." — *Hemiclidia Baxteri*, R. Br. Prot. Nov. 40; Meissn. in Pl. Preiss. i. 601, and in DC. Prod. xiv. 482; Bot. Reg. t. 1455.

**W. Australia.** King George's Sound or to the eastward, R. Brown, Baxter, Drummond, 4th coll. n. 321; near Cape Riche, Preiss, n. 527.

I have not succeeded in finding any capsules in any of our sets of Baxter's or of Drummond's specimens, but as far as I can understand the characters given, the difference in the fruit upon which the genus *Hemiclidia* was founded is merely the result of the abortion of one ovule, which occurs occasionally or perhaps constantly in one or two other species of *Dryandra*. The foliage and inflorescence of *D. falcata* are precisely those of *D. armata*, from which I am unable to distinguish flowering specimens except by the glabrous perianth-limb.

**5. D. armata, R. Br. in Trans. Linn. Soc. x. 212, Prod. 397.** A much-branched shrub of 2 to 4 ft., the young branches tomentose. Leaves 2 to 3 in. long, deeply pinnatifid with lanceolate or triangular pungent-pointed lobes, very rigid, flat or undulate, veined reticulate and sometimes slightly tomentose underneath. Flower-heads terminal, closely surrounded by floral leaves longer than the flowers. Involure broadly ovoid or almost globular, about  $\frac{3}{4}$  in. long; the bracts at first villous at length becoming glabrous, the outer ones broad, the inner narrow. Perianth above 1 in. long, more or less villous, the limb narrow, obtuse, becoming glabrous at the end but not entirely so as in that

species. Style exceeding the perianth, with a very narrow furrowed stigmatic end of about  $1\frac{1}{2}$  lines. Capsule "ripening both seeds imbedded normally in the intersepaline plate."—Meissn. in Pl. Preiss. i. 590, and in DC. Prod. xiv. 468; Bot. Mag. t. 3236; *D. furosa*, Lindl. Swan Riv. App. 33.

**W. Australia.** King George's Sound or neighbouring districts, *R. Brown*, *Baxter*, *Drummond*, n. 1, and 5th coll. n. 421; Swan River, *Preiss*, n. 519; Blackwood river and Toodyay, *Oldfield*; Mount Melville and sources of the Kalgan river, *F. Mueller*; summit of Cape Arid, *Maxwell*. I have not seen ripe capsules of this species.

6. **D. longifolia**, *R. Br.* in *Trans. Linn. Soc.* x. 215, *Prod.* 398. A tall shrub, with tomentose branches. Leaves narrow, 6 in. to 1 ft. long, pinnatifid with lanceolate or triangular rigid acute lobes, contiguous or distant, 2 to 3 lines long or longer when narrow, the undivided rachis 1 to 2 lines broad, the margins revolute, the under surface hoary or white. Flower-heads large, terminating short branches, surrounded by long floral leaves. Involucre broad,  $1\frac{1}{2}$  in. long, the outer bracts with a short broad base and subulate recurved points, the inner ones linear-lanceolate and shortly acuminate but variable in breadth. Perianth silky-pubescent,  $1\frac{1}{2}$  in. long, the limb hirsute with a few longer hairs, narrow,  $2\frac{1}{2}$  lines long. Style shortly exceeding the perianth, the stigmatic end scarcely distinct, slightly angular.—Meissn. in DC. Prod. xiv. 477; Bot. Mag. t. 1582; Sweet, Fl. Austral. t. 3; Paxt. Mag. iii. 171, with a fig.

**W. Australia.** Lucky Bay (?), *R. Brown*, *Baxter*; summit of Cape Arid, *Maxwell*.

7. **D. Fraseri**, *R. Br.* *Prot.* Nov. 39. An erect shrub of 2 or 3 ft., the young branches tomentose. Leaves narrow, 2 to 4 in. long, divided to the midrib into rather distant linear segments rigid and pungent-pointed, divaricate or recurved, 3 to 4 lines long, the margins revolute and narrowly decurrent to near the next segments. Flower-heads rather large and terminal or a few smaller ones on short axillary branches, all closely surrounded by floral leaves longer than the flowers. Involucre  $\frac{3}{4}$  to 1 in. long, tomentose, the outer bracts broad at the base, tapering into long slender hairy points, the innermost linear. Perianth slightly silky except the glabrous base,  $1\frac{1}{4}$  in. long, the limb narrow, about 2 lines long. Style exceeding the perianth, curved, the stigmatic end not thickened and only distinguishable by a somewhat darkened colour.—Meissn. in Pl. Preiss. i. 596, and in DC. Prod. xiv. 478.

**W. Australia.** Swan river, *Fraser*, *Drummond*, n. 129, and 1st coll. n. 642; York district, *Preiss*, n. 517; Dundagaran and Port Gregory, *Oldfield*.

SERIES 2. FLORIBUNDÆ.—Flower-heads small, mostly terminal, the floral leaves either shorter than the flowers or few and spreading, leaving the flowers more exposed than in any other series. Involucres broad. Perianths under 1 in. long. Stigmatic end of the style small, but thickened and distinct. Leaves with prickly or rigid teeth or lobes.

8. **D. floribunda**, R. Br. in *Trans. Linn. Soc.* x. 212, Prod. 397. A bushy shrub of 4 to 8 ft., the young shoots more or less silky-hairy. Leaves sessile or nearly so, obovate to cuneate, more or less undulate and prickly-toothed, especially towards the end, otherwise flat, neither prominently veined nor white underneath, all under 1 in. in some specimens, 2 in. long or even more in others. Flower-heads terminal, usually numerous, closely surrounded by floral leaves not exceeding the flowers. Involucre campanulate, under  $\frac{1}{2}$  in. long, pubescent; bracts not very acute, the outer ones lanceolate, the inner very narrow. Perianth not quite 1 in. long, the tube silky-pubescent above the glabrous base, the limb obtuse, almost glabrous. Style thickened and bulbous-like above the base, scarcely exceeding the perianth, the stigmatic end short, slightly clavate. Capsule obovate-falcate,  $\frac{1}{2}$  in. long in some specimens, smaller in others.—Meissn. in Pl. Preiss. i. 589, and in DC. Prod. xiv. 468; *Josephia sessilis*, Knight, Prot. 110.

**W. Australia.** King George's Sound, R. Brown, Baxter, and thence to Swan river, Fraser, Drummond, n. 118, 1st coll. n. 638, 639, 2nd coll. n. 344, Preiss, n. 520, 521, Oldfield; Champion Bay, Oldfield.

Var. *major*. Branches more tomentose and hairy. Leaves 2 to  $2\frac{1}{2}$  in. long, more frequently cordate; flowers larger.—Bot. Mag. t. 1581.—Cape Naturalist, Oldfield.

The arborescent form mentioned by F. Mueller, Fragm. vi. 92, and vii. 50, is *Banksia ilicifolia*.

9. **D. carduacea**, Lindl. Swan Rie. App. 33. A tall shrub attaining sometimes 12 ft., the young branches slightly tomentose or glabrous. Leaves mostly sessile, linear-cuneate or lanceolate, undulate, deeply prickly-toothed or pinnatifid with pungent-pointed lobes, 1 to 2 or rarely 3 in. long, hoary or whitish underneath, but the margins not revolute. Flower-heads rather small, terminal, the floral leaves not exceeding the flowers. Involucre campanulate, about  $\frac{1}{2}$  in. long, the bracts very numerous, lanceolate or linear, with recurved tips. Perianth under 1 in. long, the limb about 1 line long, silky-hairy as well as the tube. Style scarcely exceeding the perianth, with a small slightly thickened stigmatic end. Capsule rounded, about 5 lines long and broad, 1-seeded by abortion in the one examined.—Meissn. in Pl. Preiss. i. 591, and in DC. Prod. xiv. 469; Bot. Mag. t. 4317.

**W. Australia.** Swan river, Drummond, 1st coll., Preiss, n. 516; Williams river and Toodyay, Oldfield. Some of Drummond's specimens belong to a form with longer and less prickly leaves and rather larger flower heads, with the involucral bracts less squarrose, approaching in some respects *D. falcata* and *D. armata*, but with the habit and shorter floral leaves of the *Floribunda*.

10. **D. carlinoides**, Meissn. in Pl. Preiss. ii. 267, and in DC. Prod. xiv. 479. An erect shrub, with the branches often almost verticillate round the old flower-heads (proceeding from the axils of some of the leafy bracts). Leaves linear or lanceolate, rigid and pungent-pointed, entire or with 1 or 2 prickly teeth on each side near the end, the margins revolute, tapering at the base,  $\frac{3}{4}$  to 1 in. long, hoary or white underneath. Flower-heads terminal, usually numerous. Involucre

hemispherical or nearly globular,  $\frac{3}{4}$  to 1 in. diameter, more or less villous, with a few outer leafy bracts longer than the flowers, but spreading and not enclosed in floral leaves, mostly dilated at the base and passing into the imbricate bracts, which are very numerous, lanceolate with long narrow points. Paleæ plumose with long woolly hairs. Perianths glabrous, about 7 lines long, the limb narrow, mucronate,  $1\frac{1}{2}$  lines long. Style rather longer than the perianth, the stigmatic end short, slightly thickened and angular. Capsules scarcely above  $\frac{1}{4}$  in. long.

**W. Australia,** Drummond, 2nd coll. n. 345.

11. **D. polyccephala,** Benth. Branches rather slender, glabrous or nearly so. Leaves narrow, divided to the midrib into small rather distant segments, the lower leaves 3 to 6 in. long with short broad obtuse segments, those of the flowering branches 1 to 2 in. long, very spreading or recurved, with narrow acute segments of 1 to 2 lines; all the segments very rigid, with recurved margins decurrent along the rhachis to the next segment. Flower-heads small, numerous, terminating lateral branches or crowded at the end of the principal ones, the floral leaves few and spreading. Involucre broadly campanulate, 3 to 4 lines long, the bracts numerous, narrow, with subulate usually recurved points. Perianth-tube about  $\frac{1}{2}$  in. long, silky-villous except the minute glabrous base, the limb glabrous, about 1 line long. Style longer than the perianth, with a small but distinct clavate stigmatic end. Capsule broadly obovate, not 3 lines long.—*D. squarrosa*, Meissn. in Pl. Preiss. ii. 266, and in DC. Prod. xiv. 474, not of R. Br.

**W. Australia,** Drummond, 1st coll., 2nd coll. n. 312.

12. **D. Kippistiana,** Meissn. in Hook. Kew Journ. vii. 122, and in DC. Prod. xiv. 473. An erect shrub of 2 or 3 ft., the branches loosely hoary-tomentose, the young shoots often hairy. Leaves narrow,  $1\frac{1}{2}$  to 4 in. long, pinnate; segments divided to the midrib, numerous, obliquely triangular, obtuse or acute, 1 to 2 lines long, the margins revolute, decurrent along the rhachis, but shortly so the segments being much closer than in *D. polyccephala*, usually white underneath. Flower heads scarcely larger than in *D. polyccephala*, terminal with a few also on very short axillary branches, the floral leaves few and spreading. Involucre broadly campanulate, under  $\frac{1}{2}$  in. long, the bracts not numerous, broad and tomentose at the base, tapering into fine points ciliate with long hairs. Perianth-tube nearly  $\frac{1}{2}$  in. long, loosely hairy above the glabrous base, the limb narrow, above 1 line long, densely villous with longer hairs. Style longer than the perianth, with a small but distinct dark-coloured obtuse stigmatic end.—*D. foliolata*, Meissn. in Pl. Preiss. ii. 266, not of R. Br.

**W. Australia,** Drummond, 4th coll. n. 343; near Dundagaran, Oldfield.

SERIES 3. CONCINNÆ.—Flower-heads small, broad, axillary, the bracts narrow, the floral leaves usually spreading. Perianth under  $\frac{3}{4}$  in. long. Stigmatic end of the style small but thickened and distinct.

Leaves flat or nearly so, tomentose underneath, semipinnatifid with short acute mucronate or rarely pungent-pointed lobes.

This series has the flower-heads of the *Floribundæ* but axillary, with the leaves of the *Plumosæ* but less deeply divided.

13. **D. squarrosa**, R. Br. *Prot. Nov.* 38. A shrub with rather slender branches, at first tomentose but soon becoming glabrous. Leaves narrow, the lower ones 4 to 8 in. long, those of the flowering branches usually about half that length, notched, prickly-toothed or pinnatifid, with short pungent-pointed or angular rather distant teeth or lobes rarely reaching half-way to the midrib, the entire centre of the leaf of a uniform breadth of  $1\frac{1}{2}$  to  $2\frac{1}{2}$  lines, the whole leaf flat or undulate, hoary or tomentose underneath. Flower-heads small, often numerous, mostly axillary surrounded by a few spreading floral leaves. Involucra broadly campanulate, under  $\frac{1}{2}$  in. long, the bracts numerous, narrow, acute or with subulate often recurved points. Perianths silky-villous, about 7 lines long, the limb about 1 line long, villous with longer hairs. Style longer than the perianth, with a small slightly thickened stigmatic end.—Meissn. in DC. *Prod.* xiv. 474, as to Baxter's specimens only.

**W. Australia.** King George's Sound or to the eastward, *Baxter, Harvey.*

14. **D. serra**, R. Br. *Prot. Nov.* 38. An erect shrub, from 5 to 10 or even 15 ft. high. Leaves 2 to 6 in. long, divided halfway to the midrib into numerous broadly triangular regular lobes, mucronate with short rigid points, flat, reticulate above, tomentose underneath. Flower-heads small, on very short axillary peduncles or branches, surrounded by a few spreading floral leaves. Involucral bracts not very numerous, lanceolate or linear-lanceolate, acute, usually dark-coloured with densely ciliate margins, the inner ones 3 to 4 lines long. Perianths about 7 lines long, slender, silky-villous, the limb small, oblong, obtuse. Style about  $\frac{3}{4}$  in. long, with a small but thickened stigmatic end. Capsule falcate, often  $\frac{1}{2}$  in. long.—Meissn. in Pl. Preiss. i. 591, and in DC. *Prod.* xiv. 470.

**W. Australia.** King George's Sound or neighbouring districts, *Baxter, Drummond*, n. 172, 3rd coll. n. 296, *Preiss.* n. 513; Wuljenup, *Maxwell.*

15. **D. concinna**, R. Br. *Prot. Nov.* 38, *not of Meissn.* A shrub, probably tall, with tomentose branches. Leaves 2 to 4 in. long, pinnatifid with triangular finely pointed lobes, reticulate above and tomentose underneath as in *D. serra*, but the leaf usually rather broader, with fewer lobes reaching about halfway to the midrib. Flower-heads small, globular, on very short axillary peduncles surrounded by spreading floral leaves as in *D. serra*, but the bracts more numerous, oblong or oblong-linear, very obtuse and tomentose all over, the inner ones 3 to 4 lines long. Perianths more villous than in *D. serra*, otherwise apparently the same but only seen withered. Capsule nearly  $\frac{1}{2}$  inch long, oblique but not so falcate as in *D. serra*.

**W. Australia.** King George's Sound or to the eastward, *Baxter, Drummond*, n. 101.

**16. *D. foliolata***, R. Br. *Prot. Nov.* 38. Apparently a tall shrub, the branches tomentose and hirsute with spreading hairs or nearly glabrous. Leaves 3 to 6 in. long,  $\frac{1}{2}$  to 1 in. broad, divided more than halfway to the midrib into obliquely ovate-triangular lobes, acute or mucronate, flat or nearly so, reticulate above, tomentose and transversely veined underneath. Flower-heads small, globular, on very short axillary peduncles or branches, surrounded by spreading floral leaves. Involucral bracts not very numerous, linear, softly villous, 3 or 4 lines long, mostly expanded at the end into a small lamina. Perianths very villous, about  $\frac{1}{2}$  in. long. Style  $\frac{3}{4}$  in. long, with a small but thickened stigmatic end. Capsule obliquely rounded, about 5 lines broad.—Meissn. in DC. *Prod.* xiv. 471; *D. mutica*, Meissn. l.c.

**W. Australia.** King George's Sound or neighbouring districts, *Baxter, Drummond*, 4th coll. n. 309; Stirling Range, *Oldfield*, P. Mueller.

**Series 4. FORMOSÆ.**—Flower-heads usually large, broad, terminal or axillary, surrounded by long floral leaves. Involucral bracts broad, villous. Styles long with a long narrow stigmatic end. Leaves flat or nearly so, tomentose underneath, pinnatifid or pinnate, with numerous contiguous triangular lobes or segments, acute or mucronate but not pungent-pointed.

The inflorescence and flowers are nearly those of the *Formosa*, but the foliage gives a very different aspect to the specimens.

**17. *D. stupposa***, Lindl. *Swan Riv. App.* 33. A shrub of about 10 ft., closely resembling *D. formosa*, but the leaves are not divided to the midrib, the lobes often larger and more acute, and the flower-heads, either terminal or on short lateral branches, are rather larger. Perianth nearly  $1\frac{1}{2}$  in. long, woolly-villous above the glabrous base, the upper part of the tube and limb silky-villous. Style longer than the perianth, with a narrow furrowed stigmatic end.—Meissn. in Pl. Preiss. i. 591, and in DC. *Prod.* xiv. 470.

**W. Australia.** Swan river, *Drummond*, 1st coll. n. 643; near Grantham, *Preiss*, n. 502 (the latter specimen not seen).

**18. *D. nobilis***, Lindl. *Swan Riv. App.* 33. A shrub of 4 to 7 ft. very nearly allied to *D. formosa*. Leaves longer, the lobes broader, separated by more open sinuses and not always divided to the midrib. Flower-heads still larger than in *D. formosa*, but the involucre rather smaller, and all on exceedingly short lateral branches, surrounded by numerous floral leaves. Perianths  $1\frac{1}{2}$  in. long, woolly-villous above the glabrous base, then silky-villous. Styles nearly 2 in. long.—Meissn. in Pl. Preiss. i. 592, and in DC. *Prod.* xiv. 469; Bot. Mag. t. 4633, copied into Lm. Fl. Jard. t. 226, and into Fl. des Serres. vii. t. 728.

**W. Australia.** Swan river, *Drummond*, 1st coll. n. 646; near Wicklow, *Preiss*, n. 523 (Meissn.).

19. **D. mucronulata**, R. Br. in *Trans. Linn. Soc.* x. 213, *Prod.* 398. A shrub very closely allied to *D. nobilis* and *D. formosa*. Branches tomentose and villous. Leaves very long and narrow, with very numerous triangular-falcate rigid acute lobes which as in *D. nobilis* do not reach the midrib, all nearly flat and tomentose underneath. Flower-heads on very short axillary branches or almost sessile, surrounded by numerous floral leaves, smaller than in *D. formosa*. Outer involucral bracts ovate acuminate, the inner ones oblong-linear, obtuse, nearly 1 in. long and 2 lines broad, silky-villous. Perianths 8 to 10 lines long, woolly-villous above the glabrous base, the remainder silky-villous but the hairs not so long and fulvous as in *D. formosa*. Style under 1 in. long. Capsule nearly  $\frac{3}{4}$  in. broad.—Meissn. in DC. *Prod.* xiv. 470.

**W. Australia.** King George's Sound or the neighbouring districts, R. Brown, Baxter, Drummond, 4th coll. n. 311; Gordon plains, Maxwell; summits of Stirling Range, F. Mueller.

20. **D. formosa**, R. Br. in *Trans. Linn. Soc.* x. 313, t. 3, *Prod.* 397. An erect shrub attaining 8 to 15 ft., the branches tomentose and often hirsute with long fine spreading hairs. Leaves 4 to 8 in. long, regularly divided to the midrib into obliquely triangular or broadly falcate segments, 2 to 3 lines long and broad, mostly acute, flat and not very thick, tomentose underneath. Flower-heads terminal, broad, surrounded by floral leaves longer than the flowers, the inner ones dilated at the base and passing into the involucral bracts. Involucre hemispherical, 1 to 1½ in. diameter, the outer bracts ovate acuminate, the inner ones narrow and obtuse, all tomentose-villous. Perianths 1½ to 1⅔ in. long, woolly-villous above the short glabrous base, the remainder silky-villous, the limb narrow acuminate, about 2 lines long, densely villous, with long often fulvous hairs. Style scarcely longer than the perianth, with a narrow furrowed stigmatic end. Capsule about 5 lines long and 3 lines broad.—Meissn. in Pl. Preiss. i. 593, and in DC. *Prod.* xiv. 471; Sweet, Fl. Austral. t. 53; Bot. Mag. t. 4102.

**W. Australia.** King George's Sound, R. Brown, Fraser, Drummond, 3rd coll. n. 293, Preiss, n. 501, and many others. The flower-heads and flowers vary in size, even on the same specimens; some specimens from Barker and from Oldfield have them all smaller than usual. The capsules appear to be always small.

21. **D. Baxteri**, R. Br. *Prot.* Nov. 38. A shrub of 4 to 6 ft., the branches densely tomentose. Leaves very narrow, often above 1 ft. long, divided to the midrib into very numerous small triangular-falcate rigid acute segments, the largest scarcely 2 lines long and broad, all with recurved margins and white underneath. Flower-heads almost sessile in the axils, surrounded by long floral leaves. Involucre hemispherical, above 1 in. broad, densely ferruginous-villous, the bracts lanceolate, acuminate, the inner ones 3 to 1 in. long. Perianths nearly 1 in. long, woolly near the base, then silky-villous, the limb 2 lines long, narrow, acute, tipped with a tuft of long fine hairs. Style ex-

ceeding the perianth, the slender stigmatic end scarcely distinct.—Meissn. in Pl. Preiss. i. 593, and in DC. Prod. xiv. 471.

**W. Australia.** King George's Sound or to the eastward, *Baxter*, *Drummond*, *Preiss*, n. 500.

**SERIES 5. NIVEÆ.**—Low shrubs with a creeping trunk and very short ascending flowering stems bearing one or few ovoid flower-heads surrounded by long floral leaves. Leaves pinnate with numerous rigid segments, the margins usually but not always revolute and white underneath.

The species here enumerated differ in habit from all except some states of *D. vestita* and two species of the section *Aphragmia*, which require further comparison with *D. Preissii* as to their carpological characters.

**22. *D. nivea*, R. Br. in Trans. Linn. Soc. x. 214, Prod. 398.** A dwarf shrub, the stems sometimes scarcely any besides the underground or creeping trunk, rarely ascending to nearly 1 ft. Leaves 4 to 8 in. long, pinnate, divided almost or quite to the midrib into numerous regular triangular or falcate segments, obtuse or rarely acute, 1 to 3 lines long, varying in breadth, those towards the end of the leaf usually separated by acute sinuses, the lower ones more distant and decurrent, or all different in this respect in different leaves, all rather thick, with revolute margins, white underneath. Flower-heads terminal, closely surrounded by long floral leaves. Involucre ovoid, usually about 1 in. long; bracts numerous, narrow, glabrous or minutely ciliate, or with the ends more or less woolly, the outer short ones sometimes subulate, the inner or obtuse or scarcely acute. Perianths about as long as the involuc. loosely villous except the undivided base, the limb scarcely 1½ lines long. Style considerably longer than the perianth, with a small narrow stigmatic end slightly thickened at the base. Capsule obovate-falcate, about ½ in. broad.—Meissn. in Pl. Preiss. i. 594, and in DC. Prod. xiv. 472; *Banksia nivea*, Labill. Voy. i. 411, t. 24; *Josephia rachidifolia*, Knight, Prot. 111.

**W. Australia.** King George's Sound, *R. Brown*, and many others; eastward to Cape Legrand, *Labillardière*; northward to Vasse, Swan, Moore and Murchison rivers, *Drummond*, *Preiss*, *Oldfield*, and others.

This species, evidently widely spread in the sandy plains of W. Australia, includes Drummond's n. 64, 125, 134, 1st coll. n. 640, 641, 645, 2nd coll. n. 346, 5th coll. n. 419, and Preiss's n. 506, 510, and (according to Meissner) 504 and 508, besides numerous specimens from other collectors. Drummond's 4th coll. n. 313, with rather longer flowers (*D. Brownii*, Meissn. in Pl. Preiss. i. 595, and in DC. Prod. xiv. 472), Preiss's n. 511, from near Pointwater, with the involucular bracts rather more woolly at the end (*D. Lindleyana*, Meissn. in Pl. Preiss. i. 598, and in DC. l.c.); and Drummond's 6th coll. n. 212, from between Moore and Murchison rivers, with the leaf-segments rather narrower and more distinct than usual (*D. stenoprion*, Meissn. in Hook. Kew Journ. vii. 122, and in DC. Prod. xiv. 473), appear to me to be scarcely distinguishable from specimens of the commoner forms even as marked varieties.

**23. *D. arctotidis*, R. Br. Prot. Nov. 39.** A dwarf shrub with the habit of *D. nivea*. Leaves much more rigid, 4 to 8 in. long, deeply divided into numerous linear-falcate rigid acute lobes, 2 to 4 lines long,

separated by broad sinuses, with revolute margins, white underneath. Flower-heads rather large, terminal, surrounded by numerous long floral leaves ciliate at the base with long spreading hairs. Involucræ ovoid, above 1 in. long, the bracts numerous, oblong-lanceolate or the inner ones almost linear, nearly glabrous except the densely ciliate margins. Perianths 1½ in. long, the undivided glabrous base longer than in most species, the remainder loosely villous. Style nearly 2 in. long, with a small narrow dark-coloured stigmatic end.—Meissn. in Pl. Preiss. i. 595, and in DC. Prod. xiv. 475; Bot. Mag. t. 4035.

**W. Australia.** King George's Sound or neighbouring districts, Baxter, Drummond, 5th coll. n. 418; Mount Manypeak, Preiss, n. 515.

Var. *tortifolia*. Leaf-lobes narrower and more rigid, not so white underneath.—*D. tortifolia*, Kipp. in Hook. Kew Journ. vii. 121; Meissn. in DC. Prod. xiv. 475.—Between Moore and Murchison rivers, Drummond, 6th coll. n. 211. A specimen of Drummond's 3rd coll. suppl. n. 101, is intermediate as it were between this and the typical form as to foliage, but is not in flower.

24. **D. nana**, Meissn. in Hook. Kew Journ. vii. 121, and in DC. Prod. xiv. 475. A dwarf or creeping shrub with the habit of *D. nivea*. Leaves 2 to 4 in. long, crowded round the flower-heads on very short ascending stems, divided almost to the midrib into linear-lanceolate acute lobes, all very spreading and often falcate, 2 to 3 lines long, the margins not revolute, scarcely white underneath, with prominent primary veins. Involucræ closely sessile within the leaves, ovoid, under ½ in. long, the bracts narrow-lanceolate, silky-villous, the outer ones with subulate points, the inner ones acute. Perianths with the entire base <sup>ut</sup> about ½ in. long villous towards the end, the divided portion of the tube about as long, the limb ovoid, reflexed before opening, slightly hairy. Style hairy, very long, doubled down to the limb until released, and then straightening to a length of about 3 in., with a large thick ovoid stigmatic end.

**W. Australia.** Near Dundagaran, Drummond, 6th coll. n. 210. With the habit of the *Nivea*, this species has a somewhat different foliage, and differs from the whole genus in the remarkable style.

25. **D. Preissii**, Meissn. in Pl. Preiss. i. 599, and in DC. Prod. xiv. 480. A dwarf shrub with short procumbent stems tomentose and with linear-lanceolate scales on the base of each year's growth. Leaves rarely above 6 in. long, pinnate; segments numerous, linear, acute or mucronate, rigid, with revolute margins, entire or pinnatifid, the larger ones above 1 in. long, but often all under 1 in., tomentose underneath. Flower-heads terminating the short ascending stems, with a few long floral leaves round them. Involucræ ovoid, about 1 line long, the bracts numerous, all narrow, the outer ones with a short broader base and long subulate ends, the others linear or linear-lanceolate, flat and rigid, glabrous or loosely tomentose. Perianths about 1 in. long, loosely hirsute, the tube very slender, the limb broader, about 1 line long. Style 1½ in. long, the stigmatic end small, narrow-conical. Fruit unknown.

**W. Australia**, Drummond, 2nd coll. n. 301; Gordon river, Preiss, n. 528; Stirling range and Hay river, F. Müller. This species is placed next to *D. bipinnatifida*

by Meissner on account of the foliage; the inflorescence and involucre, usually more indicative of true affinity, are more those of the *Niveæ*. The sectional character and consequently the real place cannot be ascertained until the fruit shall have been examined.

SERIES 6. OBVALLATÆ.—Flower-heads axillary, ovoid or small, enveloped in long floral leaves. Leaves either pinnate with very small rigid segments or more frequently pinnatifid with very rigid pungent-pointed lobes.

26. **D. sclerophylla**, Meissn. in Hook. *Kew Journ.* vii. 123, and in DC. *Prod.* xiv. 474. Apparently a low but erect shrub, not much branched. Leaves under 3 in. long, pinnate; segments numerous, triangular, acute, rarely 2 lines long, rigid, with revolute margins shortly decurrent to the next segments. Flower-heads not numerous, axillary or sometimes terminal, closely surrounded by numerous floral leaves of 2 or 3 in. Involucre 7 to 8 lines long, the bracts lanceolate, tapering into plumose points. Perianth about  $\frac{3}{4}$  in. long, silky-villous, the oblong obtuse limb becoming almost glabrous. Style rather longer than the perianth, with a slightly thickened stigmatic end.

**W. Australia.** Between Moore and Murchison rivers, Drummond, 6th coll. n. 209. The species is very nearly allied to *D. pulchella*.

27. **D. pulchella**, Meissn. in DC. *Prod.* xiv. 473. Apparently a low but stout and erect shrub, the branches scarcely tomentose. Leaves 3 to 6 in. long, crowded, pinnate, with numerous rigid spreading acute or pungent-pointed segments rarely above 1 line long, the margins revolute and decurrent to the next segment. Flower-heads on short axillary branches closely surrounded by floral leaves. Involucre small, ovoid; bracts not numerous, the outer ones more or less leafy, the inner ones narrow, with long points. Perianth about 1 in. long, the tube slightly silky, the limb oblong, covered with rather long silky hairs. Style when set free nearly  $1\frac{1}{2}$  in. long, with a narrow but distinct stigmatic cone.

**W. Australia**, Drummond, 4th coll. n. 312.

28. **D. plumosa**, R. Br. in *Trans. Linn. Soc.* x. 214, *Prod.* 398. A shrub of about 2 ft., the branches tomentose and sometimes densely villous with fine spreading hairs. Leaves 6 in. to 1 ft. long, deeply pinnatifid with triangular rigid acute lobes, the larger ones 2 to 3 lines long and broad, the sinuses broad, the margins recurved, tomentose underneath. Flower-heads small, sessile in the axils, surrounded by a few small floral leaves. Involucre 1 in. long, or rather more, the bracts narrow, with long filiform plumose-hairy points. Perianth  $\frac{1}{2}$  in. long, densely woolly-villous, the limb oblong, about 1 line long. Style longer than the perianth, with a small slightly furrowed stigmatic end. Capsule about 7 lines broad.—Meissn. in Pl. Preiss. i. 592 and in DC. *Prod.* xiv. 470.

**W. Australia.** King George's Sound and neighbouring districts, R. Brunn, Baxter, Drummond, 4th coll. n. 310, Preiss, n. 507, Maxwell.

29. **D. seneciifolia**, R. Br. *Prot. Nov.* 39. A shrub of 2 or 3 ft., with stout erect tomentose stems, sometimes nearly simple. Leaves crowded, 2 to 4 in. long, deeply pinnatifid with rather distant linear or lanceolate pungent-pointed lobes 1 to 2 or rarely 3 lines long, the margins revolute, white underneath. Flower-heads small, narrow, sessile in the axils and buried in the numerous floral leaves. Involucral bracts, many of them leafy, the inner ones linear-subulate, with plumose-villous points, about  $\frac{1}{2}$  in. long. Perianth about 5 lines long, woolly-villous above the glabrous base, the limb glabrous or sprinkled with few silky hairs. Style scarcely exceeding the perianth, the stigmatic end not thickened and smooth. Capsule ovate, scarcely  $\frac{1}{4}$  in. long.—Meissn. in DC. *Prod. xiv.* 476; *D. cryptocephala*, Meissn. in Pl. Preiss. i. 596, and in DC. *Prod. xiv.* 479; *Planch. Hort. Donat.* t. 2.

**W. Australia.** King George's Sound or adjoining districts, *Baxter, Drummond, 3rd coll. n. 297, 4th coll. n. 316*; rocky ridges, Perongerup range, *Maxwell*.

30. **D. vestita**, Kipp. in *Hook. Kew Journ.* vii. 121. Stems in our specimens erect from a very thick woody trunk,  $\frac{1}{2}$  to  $1\frac{1}{2}$  ft. high, very rigid, hoary-tomentose or almost woolly. Leaves linear or linear-cuneate, 3 to 5 in. long, very rigid, bordered by distant teeth or lobes rarely reaching halfway to the midrib, all divaricate acute or pungent-pointed, 1 to  $1\frac{1}{2}$  lines long, the entire centre or rhachis  $1\frac{1}{2}$  to 3 lines broad, transversely reticulate underneath. Flower-heads axillary and terminal, closely surrounded by floral leaves. Involucre ovoid-oblong, softly villous,  $1\frac{1}{4}$  to  $1\frac{1}{2}$  in. long; bracts numerous, narrow linear-lanceolate or linear, acuminate, articulate above the base. Perianth above 1 in. long, woolly-villous above the glabrous base, the limb glabrous, 3 lines long. Style about as long as the perianth, the long stigmatic end scarcely distinguishable. Capsule oblique, above  $\frac{1}{2}$  in. long.—Meissn. in DC. *Prod. xiv.* 477.

**W. Australia**, *Drummond, n. 158, and 5th coll. suppl. n. 20*. This species approaches the *Nivæa* in habit but is much more rigid and erect, with the thistle-like aspect of the *Obvallata*.

31. **D. cirsoides**, Meissn. in DC. *Prod. xiv.* 476. Branches stout, tomentose and villous. Leaves crowded, 2 to 3 in. long, deeply pinnatifid, but not quite to the midrib; the lobes lanceolate,  $\frac{1}{4}$  to nearly  $\frac{1}{2}$  in. long, very rigid and pungent-pointed, the margins slightly recurved, hoary or whitish underneath. Flower-heads axillary, enclosed in numerous floral leaves. Involucre ovoid, nearly 1 in. long, villous, the bracts numerous, linear-lanceolate or linear, rigid, appressed. Perianths (only seen very few in a withered state) above 1 in. long, slender, villous above the glabrous base, the limb very narrow, 3 lines long. Styles all fallen from our specimens, the stigmatic end according to Meissner slender.

**W. Australia**, *Drummond, 4th coll. n. 308*.

32. **D. Hewardiana**, Meissn. in DC. *Prod. xiv.* 477. Branches tomentose or nearly glabrous. Leaves from 3 or 4 in. to nearly 1 ft.

long, pinnatifid, the lobes reaching more than half way to the midrib, obliquely lanceolate or triangular, rigid and pungent-pointed, often distant, 2 to 4 lines long, with recurved margins, white underneath. Flower-heads axillary, distant or crowded, surrounded by a few long floral leaves. Involucre campanulate, rarely above  $\frac{1}{2}$  in. long, the outer bracts rather broad and acute, the inner ones narrow, all tomentose or villous and some or all tapering into fine often recurved points. Perianths nearly 1 in. long, woolly-villous above the short glabrous base, the remainder densely silky-hairy except the glabrous limb. Style not much longer than the perianth, with a small slightly clavate stigmatic end. Capsule about  $\frac{1}{2}$  in. long, densely villous.

**W. Australia**, Drummond, 4th coll. n. 315. This and the following species have the involucres and flowers almost of the *Concinnae*.

33. **D. patens**, Benth. A branching shrub, nearly allied to *D. Hewardiana*, but with the fewer more spreading floral leaves of the *Concinnae* and a different involucre. Leaves 4 to 10 in. long, deeply pinnatifid, the lobes lanceolate or triangular, very rigid and pungent-pointed, mostly distant, with recurved margins, white underneath. Flower-heads axillary, sessile or shortly pedunculate. Involucre campanulate, under  $\frac{1}{2}$  in. long as in *D. Hewardiana*, but tomentose not villous, the bracts broader obtuse or rarely mucronate, all appressed. Perianth nearly 1 in. long, woolly-villous above the short glabrous base, then silky-hairy except the glabrous limb. Style scarcely exceeding the perianth, with a small slightly clavate stigmatic end.—*D. concinna*, Meissn. in Pl. Preiss. ii. 266, and in DC. Prod. xiv. 477, not of R. Br.

**W. Australia**, Drummond, 2nd coll. n. 341.

34. **D. conferta**, Benth. A shrub apparently low, but with the stout erect stems of *D. cirsoides* and its allies. Leaves crowded, narrow, 3 to 6 in. long, pinnatifid, the lobes rather distant, rigid, pungent-pointed, white underneath with revolute margins as in *D. Hewardiana*. Flower-heads axillary, closely surrounded by long floral leaves. Involucre ovoid, villous and perhaps somewhat viscid, nearly  $\frac{3}{4}$  in. long, the bracts numerous, narrow-lanceolate or linear, obtuse or scarcely acute, closely appressed or inflexed after flowering. Perianth under 1 in. long, densely woolly-villous above the short glabrous base, the limb narrow, 1½ lines long, villous with a few long hairs, as well as the upper part of the tube. Style scarcely exceeding the perianth, with a small slender stigmatic end.

**W. Australia**, Drummond, 3rd coll. n. 295. These specimens referred by Meissner to *D. patens* (*D. concinna*, Meissn., not of R. Br.), with doubt in Pl. Preiss. ii. 266, more positively in DC. Prod. xiv. 477, appear to me to differ too much in the involucres and perianths to be united with that species.

There are other specimens from Drummond, n. 7, with the foliage of this and the preceding species, with glabrous lanceolate involucral bracts approaching those of *D. serruloides*; the flowers are however all fallen away, and the species, if really distinct, cannot be accurately described.

35. **D. horrida**, Meissn. in DC. Prod. xiv. 476. Branches thick, hoary-tomentose. Leaves crowded, narrow, 3 to 6 in. long, pinnatifid, the lobes distant, rigid, pungent-pointed, 1½ to 3 lines long, divariccate or incurved, the margins of the lobes and of the narrow rhachis closely revolute, the under surface hoary or white where open. Flower-heads axillary, closely surrounded by long floral leaves. Involucre narrow ovoid, the bracts linear or a few of the shorter ones lanceolate with long points, all villous with rather long soft hairs, the inner ones 1½ in. long, but the upper half reflexed when the flowers are open and falling away soon after. Perianths 1¼ in. long, shortly woolly-villous above the glabrous base, the limb narrow, 3 lines long, glabrous as well as the upper part of the tube. Style longer than the perianth, with a long stigmatic end scarcely distinguishable from the remainder.

**W. Australia.**, Drummond, n. 156, 4th coll. n. 314.

36. **D. serratuloides**, Meissn. in Hook. Ker Journ. vii. 123, and in DC. Prod. xiv. 475. Branches hoary-tomentose. Leaves crowded, 2 to 3 in. long, deeply pinnatifid but not quite to the midrib, the lobes linear-lanceolate, often falcate, rigid and pungent-pointed, nearly flat, pale or scarcely white underneath, 2 to 4 lines long. Flower-heads axillary, closely surrounded by floral leaves. Involucre broadly ovoid or almost globular, about ¾ in. long, the bracts lanceolate or the outer ones ovate, obtuse, appressed, at first minutely ciliate, at length glabrous and smooth. Perianths about 1 in. long, silky-hairy except the glabrous base, and the hairs of the limb fewer and deciduous. Style considerably longer than the perianth, the stigmatic end not thicker but darker coloured and furrowed.

**W. Australia.** Moore river, Drummond, 6th coll. n. 213.

37. **D. comosa**, Meissn. in DC. Prod. xiv. 478. Branches slightly tomentose. Leaves 6 in. to above 1 ft. long, very narrow, rigid, flexuose, bordered by small pungent-pointed distant teeth or lobes, 1 to 1½ lines long, the margins of the teeth and rhachis revolute, leaving a narrow white under surface or channel between them and the broad midrib. Flower-heads axillary, with a few long floral leaves round them. Involucre broadly ovoid, 1½ to 1¾ in. long, the outer bracts ovate with short points, the inner ones lanceolate to linear, acute or the innermost almost obtuse, all glabrous or the margins minutely ciliate. Palea of the receptacle very slender but longer than in most species. Perianth-tube ¾ in. long, villous in the upper part of the undivided base, the limb narrow, about 2 lines long, silky-hairy. Style exceeding the perianth, the stigmatic end not thicker, but slightly furrowed.

**W. Australia.**, Drummond, 4th coll. n. 313.

SERIES 7. GYMNOCEPHALÆ.—Flower-heads lateral, on very short scaly peduncles without floral leaves outside the involucre. Involucral bracts very numerous and narrow, a few of them leaf-like in one species.

38. **D. Shuttleworthiana**, Meissn. in Hook. *Kew Journ.* vi. 122, and in DC. *Prod.* xiv. 474. Apparently a low shrub, the leafy branches hoary-tomentose. Leaves narrow, 2 to 4 in. long, divided almost to the midrib into numerous contiguous obliquely-triangular lobes of 1 to 2 lines, all rather obtuse, rigid, with recurved margins, white underneath. Flower-heads almost sessile on the main stem below the leafy branches and without floral leaves, the very short peduncle covered with small or subulate and recurved scales. Involucre campanulate, the bracts narrow, mostly linear, very numerous, the inner ones  $1\frac{1}{2}$  in. long, recurved or reflexed from the middle, the long filiform ends usually ciliate with long fine hairs. Perianths 1 in. long or rather more, woolly-villous above the glabrous base, the limb very narrow, 3 lines long, glabrous. Style not exceeding the perianth, the stigmatic end scarcely distinguishable from the remainder. Capsule obovate, nearly  $\frac{3}{4}$  in. long, densely rufous-villous.

**W. Australia.** Between Moore and Murchison rivers, Drummond, 6th coll. n. 208.

39. **D. speciosa**, Meissn. in DC. *Prod.* xiv. 479. Branches erect, tomentose. Leaves very narrow-linear, mucronate-acute, quite entire, with closely revolute margins, 3 to 5 in. long. Flower-heads very large, nodding, terminating very short leafy branches but not closely surrounded by floral leaves, the very short peduncles covered by small scales. Involucre very broad and above 2 in. long, the bracts very numerous, linear with fine points at first elegantly ciliate with spreading hairs which wear off. Perianth  $1\frac{1}{4}$  to  $1\frac{1}{2}$  in. long and therefore shorter than the involucre, woolly-hirsute above the short glabrous base, the upper half glabrous, the limb very narrow, 4 lines long. Style scarcely exceeding the perianth, the stigmatic end not distinguishable from the remainder.

**W. Australia.** Drummond, 5th coll. suppl. n. 19.

40. **D. tridentata**, Meissn. in Hook. *Kew Journ.* vii. 120, and in DC. *Prod.* xiv. 479. Stems 6 in. to 1 ft. high from an underground creeping trunk. Leaves linear or linear-cuneate, mostly 3-toothed at the end, tapering into a very short petiole, 1 to  $1\frac{1}{2}$  in. long, flat, prominently reticulate underneath. Flower-heads large, on very short peduncles from below the foliage, leafless except a few narrow scales passing into the outer involucral bracts. Involucres broad, hemispherical, a few of the outer bracts leaf-like and longer than the flowers but mostly entire and dilated at the base, passing into ovate-lanceolate bracts with long narrow points and these again into the inner linear-lanceolate ones, the palea within the flowers few and very narrow. Perianths about 1 in. long, loosely villous, the limb narrow and acute. Style much longer, rarely quite straight, the slightly furrowed stigmatic end scarcely distinct. Capsule above  $\frac{1}{2}$  in. broad.

**W. Australia.** Near Dundagaran, Drummond, 6th coll. n. 207.

**SECT. 2. APIRAGMIA.**—Outer integuments of the 2 seeds in each capsule not connate or readily separable from each other, either

remaining adnate to the seeds leaving no loose plate between them, or separating from the seeds and forming two parallel plates between them. Involucres large, with numerous broad bracts.

As far as known the carpological differences between the two sections of *Dryandra* appear to be constant, but there are several species of both in which the seed has not been examined, and the characters they furnish are very little available for practical purposes. The involucres, however, give to the species included in *Aphragnia* a different aspect from all others of the genus. The structure of the seeds is perhaps not so different in the two as would at first appear. In both the nucleus has a double integument, whilst the wing is apparently formed of a prolongation of the outer integument, only with a different venation in the inner and outer layer (the prolongation of the inner and outer faces of the seed) which occasions the ready separation of the two layers when ripe. In *Eudryandra*, as in *Banksia*, this outer integument, wing-like, detaches itself from the inner face of the seed, becomes or remains connate with the corresponding integument of the other seed to the extent of the nucleus, the wing-like prolongations forming the two wings or lobes to the plate thus interposed between the ripe seeds, the wing-like prolongation of the outer integument on the outer face forming the simple wing to the seed. In *Aphragnia* the outer integument either remains adherent to the nucleus on both faces, the wing-like prolongations forming a double wing of which the external layer is deciduous and has been called an appendicular membrane, although the homologue of the wing in *Eudryandra*, or on the inner faces of the two seeds the respective outer integuments separate from the nucleus bearing with them their respective wing-like prolongations, forming two plates between the seeds. There is in which the latter peculiarity has been observed, *D. bipinnatifida*, has been separated on that account into a distinct section, *Diplophragma*, but in the few seeds that I have been able to examine, the separation of the integument from the nucleus when not consolidated with the corresponding integument of the other seed has not appeared to me to be at all constant. The whole question requires further investigation on the part of those who may have a sufficient supply of good fruits of the several species.

41. *D. tenuifolia*, R. Br. in *Trans. Linn. Soc.* x. 215, Prod. 398. A robust shrub, sometimes low and procumbent, sometimes erect bushy and attaining 3 or 4 ft., the branches nearly glabrous, with few narrow scales at the base of each year's shoot. Leaves very narrow, often 6 to 8 in. long, with closely revolute margins, tomentose underneath, rarely all entire, frequently toothed towards the end or in the upper half only, or in the typical forms regularly divided for more than half the length or quite to the base into short recurved lobes or teeth. Flower-heads large, lateral without axillary or with very few small linear floral leaves. Involucres at first ovoid, at length very broad, black and glabrous or when young slightly woolly,  $1\frac{1}{2}$  to 2 in. long; outer bracts broad, sometimes with short subulate points, inner ones broadly linear, obtuse. Perianths not exceeding the involucres, villous above the glabrous face, pubescent or glabrous towards the end, the limb very narrow, 3 lines long. Style not exceeding the perianth, with a slightly furrowed but not thickened stigmatic end. Capsule above  $\frac{1}{2}$  in. broad. Seeds (in the fruit examined perhaps not quite ripe) entirely separating without leaving any intermediate plate, the wing very thin though formed of two separable layers. Meissn. in Pl. Preiss. i. 597, and in DC. Prod. xiv. 478; Bot. Mag. t. 3513; *D. uncata*, A. Cunn. Herb.

**W. Australia.** King George's Sound or to the eastward, R. Brown, Baxter, Drummond, 3rd coll. n. 294; Beaufort river, Preiss, n. 505; Tone river, Oldfield.—In Drummond's n. 294 the involucres are some of them as large as in *D. proteoides*.

Var. *elegans*. Leaves as in the typical form divided into numerous small segments with revolute margins white underneath; flower heads and flowers smaller, the perianths more villous.—*D. elegans*, Meissn. in DC. Prod. xiv. 473.—W. Australia, Drummond, 4th coll. n. 317, Maxwell. In the only capsule I could examine I found only one perfect seed with two equal wings, each formed of 2 plates, probably the outer integuments of both seeds had attained their full growth and become consolidated at the base, the nucleus of one of them having aborted.

42. ***D. proteoides***, Lindl. Swan Riv. App. 33. Very near *D. tenuifolia*, the stems more scaly, the leaves longer, broader although always under  $\frac{1}{2}$  in. broad, more rigid, divided into triangular rigid lobes contiguous or distant, very acute or even pungent-pointed or rarely almost obtuse. Flower-heads larger than in *D. tenuifolia*, on short lateral peduncles covered with imbricated scales without floral leaves. Involucre broadly ovoid, with very numerous broad black glabrous bracts, the innermost rows very much longer than the others and often attaining 3 in. Perianths not exceeding the involucre, glabrous or nearly so, the limb 4 lines long. Style about as long as the perianth, with a faintly sulcate but not thickened stigmatic end.—Meissn. in Pl. Preiss. i. 598, and in DC. Prod. xiv. 478.

**W. Australia.** Swan river, Drummond, 1st coll., Preiss, n. 503.

Var. *ferruginea*. Leaf-lobes rather broader, less acute and more distant, but not always so.—*D. ferruginea*, Kipp. in Hook. Kew Journ. vii. 123; Meissn. in DC. Prod. xiv. 478.—W. Australia, Drummond, 5th coll. n. 416.

43. ***D. runcinata***, Meissn. in DC. Prod. xiv. 469. A dwarf shrub, the stems scarcely any or the leafy branches scarcely above  $\frac{1}{2}$  ft. long. Leaves 6 in. to nearly 1 ft. long, deeply divided into numerous triangular lanceolate or falcate acute lobes, the largest  $\frac{1}{2}$  in. long, with recurved margins, tomentose several-nerved and reticulate underneath. Flower-heads nearly sessile, terminal or lateral. Involucres ovoid, 2 in. long, entirely like those of *D. obtusa*, as well as the flowers and style.

**W. Australia.** Drummond, 4th coll. n. 318.

44. ***D. obtusa***, R. Br. in Trans. Linn. Soc. x. 214, Prod. 398. Stems short and procumbent, tomentose-villous or concealed by imbricate scales. Leaves 6 in. to 1 ft. long, divided to the midrib or nearly so into numerous small triangular or oblong very obtuse segments,  $1\frac{1}{2}$  to 4 lines long, thick, with revolute margins, white underneath. Flower-heads terminal with a few floral leaves rather below them. Involucres ovoid, 2 in. long, the outer bracts short, ovate, passing into the long narrow inner ones, all obtuse, at first loosely tomentose, but soon quite glabrous turning black and finely striate like those of the three preceding species. Perianth nearly as long as the involucre, the tube slightly pubescent, the limb narrow, glabrous or hairy, 3 lines long. Style about as long as the perianth, the stigmatic end long narrow and furrowed.—Meissn. in DC. Prod. xiv. 471; *D. multiserialis*, F. Muell. Fragm. v. 185.

**W. Australia.** King George's Sound or to the eastward (Lucky Bay?) R. Brown, Barter, Drummond, 5th coll. n. 420; inland from Cape Legrand, Maxwell.

45. **D. bipinnatifida**, R. Br. *Prot. Nov.* 39. Stems very short or procumbent and  $\frac{1}{2}$  ft. long or rather more, densely woolly-villous but the base of each year's growth concealed by imbricate scales. Leaves 6 in. to 1 ft. long, pinnate with linear acute segments, entire or again pinnatifid as in *D. Preissii*, 1 to 2 in. long in some specimens, much smaller in others, all with revolute margins, reticulate and tomentose underneath. Flower-heads terminal but not closely surrounded by floral leaves. Involucre ovoid-oblong, 2 to  $2\frac{1}{2}$  in. long, the outer bracts ovate, the inner ones narrow-lanceolate, all obtuse, more or less woolly-villous or at length glabrous, but not black as in the preceding species, the paleæ within the head shorter and narrow. Perianth shorter than the involucre, about  $1\frac{1}{2}$  in. long, loosely villous or pubescent below the middle, glabrous towards the end, the very narrow limb  $\frac{1}{2}$  in. long. Style exceeding the perianth, with a long furrowed stigmatic end. Capsule about  $\frac{1}{2}$  in. broad.—Meissn. in *Pl. Preiss.* i. 599, and in DC. *Prod.* xiv. 480.

**W. Australia.** Swan river, Fraser, Drummond, 1st coll. n. 644, Preiss, n. 522. In the only fruit I could examine the seed was destroyed by insects. According to R. Brown, the outer integuments of the inner faces of the two seeds are free from the seeds and from each other (or separable), forming a double plate between the seeds.

46. **D. pteridifolia**, R. Br. in *Trans. Linn. Soc. x. 215*, *Prod.* 399. Stems very short and thick, densely tomentose and villous. Leaves often above 1 ft. long, pinnately divided almost or quite to the midrib into numerous linear or lanceolate straight or falcate segments,  $\frac{3}{4}$  to  $1\frac{1}{2}$  or even 2 in. long, often distant but usually dilated at the base and frequently confluent, all with recurved or revolute margins, more or less tomentose underneath, 1-nerved in some leaves, 3- to 5-nerved in other leaves on the same stem. Flower-heads large, terminal, closely surrounded by long floral leaves. Involucre hemispherical, the bracts densely villous, the outer ones ovate, the inner ones lanceolate,  $\frac{3}{4}$  to above 1 in. long. Perianths about  $1\frac{1}{2}$  in. long, silky or loosely villous with long hairs, the limb 4 to 5 lines long. Style about as long as the perianth, with a long furrowed stigmatic end. Capsule about  $\frac{3}{4}$  in. broad. Seeds in the two fruits examined quite separate without any intervening plate, each with a double wing, the inner one more transparent with flexuous fibres, the outer one (membranous appendage, R. Br.) more opaque.—Meissn. in DC. *Prod.* xiv. 480; Bot. Mag. t. 3500; *D. blechnifolia*, R. Br., in *Trans. Linn. Soc. x. 215*, *Prod.* 399; *D. nervosa*, R. Br., in Sweet, Fl. Austral. 22, *Prot. Nov.* 39; Meissn. in *Pl. Preiss.* i. 600, and in DC. *Prod.* xiv. 481; Bot. Mag. t. 3063.

**W. Australia.** King George's Sound and adjoining districts, frequent, R. Brown, Baxter, A. Cunningham, Drummond, n. 131, 4th coll. n. 320, 5th coll. n. 423, Preiss, n. 512, and others; scrubby plains from Stirling to Phillips Ranges and to Cape Arid, Maxwell. The breadth of the leaf-segments and the size of the flower-heads do not appear to be sufficiently constant to establish distinct varieties.

47. **D. calophylla**, R. Br. *Prot. Nov.* 40. A low shrub, the villous stems either very short and thick or rather longer and prostrate.

Leaves often above 1 ft. long, pinnate with numerous ovate-lanceolate or triangular-acute rigid segments; contiguous at the base and mostly separated by acute sinuses, pale, tomentose and several-nerved underneath, the larger ones 1 to  $1\frac{1}{2}$  in. long. Flower-heads terminal, closely surrounded by long floral leaves. Involucre broad, densely villous, a few of the outer bracts long and narrow, sometimes resembling reduced floral leaves, others broad and short, the inner ones linear-lanceolate. Perianths villous, at least  $1\frac{1}{4}$  in. long, the limb 4 to 5 lines long. Style about as long as the perianth, with a long narrow furrowed stigmatic end. Capsule of *D. pteridifolia*, or rather larger.—Meissn. in DC. Prod. xiv. 481; *D. Drummondii*, Meissn. in Pl. Preiss. ii. 267, and in DC. l.c.

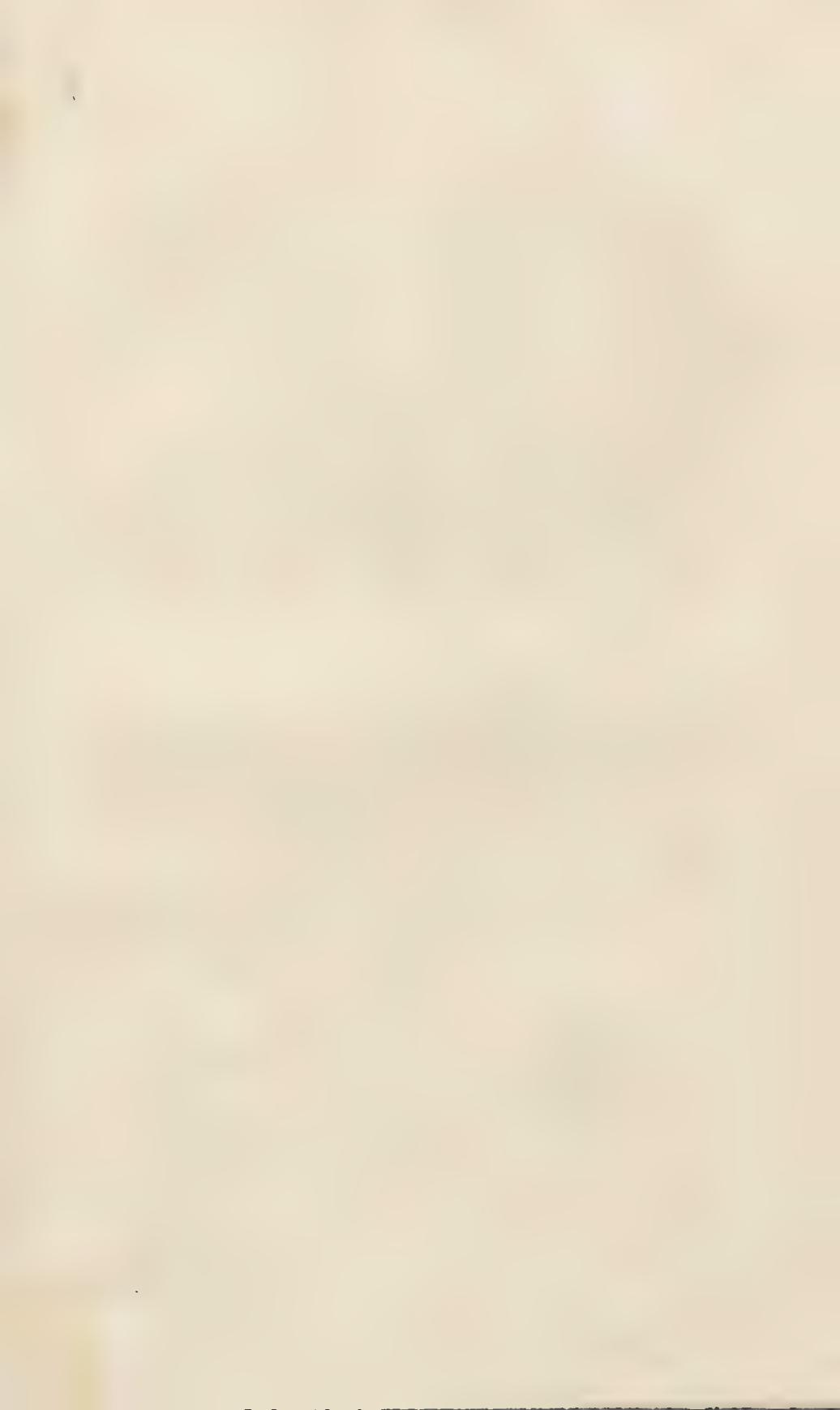
**W. Australia.** King George's Sound or neighbouring districts, *Baxter*, *Drummond*, 2nd coll. n. 299, 300, 301, 4th coll. n. 319; *Kalgan river*, *Oldfield*.

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#### ADDENDUM.

Under Verbenaceæ, after the synopsis of genera, p. 33, add—

*Pentapterion involucratum*, Turcz. in Bull. Soc. Imp. Nat. Mosc. 1863, ii. 194, proposed as a new genus of Verbenaceæ, is *Leucopogon plumuliflorus*, described above, vol. iii. p. 205.









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*The Synonyms and Species incidentally mentioned are printed in Italics.*

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